

#### ACCONTAMINATION ASSESSMENT REPORT

NAVAL AIR STATION
RADAR SITE (BLDG. 3255)
NAVAL AIR STATION
PENSACOLA, FLORIDA

#### PREPARED BY:

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DEAN SPENCER, P.E., CODE 00500, ENGINEER-IN-CHARGE

## Contamination Assessment Report

## Radar Facility, Naval Air Station Pensacola, Florida

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#### 1.0 INTRODUCTION

#### 1.1 PURPOSE

In April 1994, the Navy Public Work Center was retained by the Naval Air Station to investigate potential hydrocarbon contamination and conduct a contamination assessment at Building 3255 located at NAS Pensacola. The contamination assessment at Building 3255 was initiated after a petroleum odor was discovered in the soil and groundwater by PWC personnel during excavation of a utility trench in April 1992. The findings and conclusions of the field investigation for the contamination assessment are presented herein.

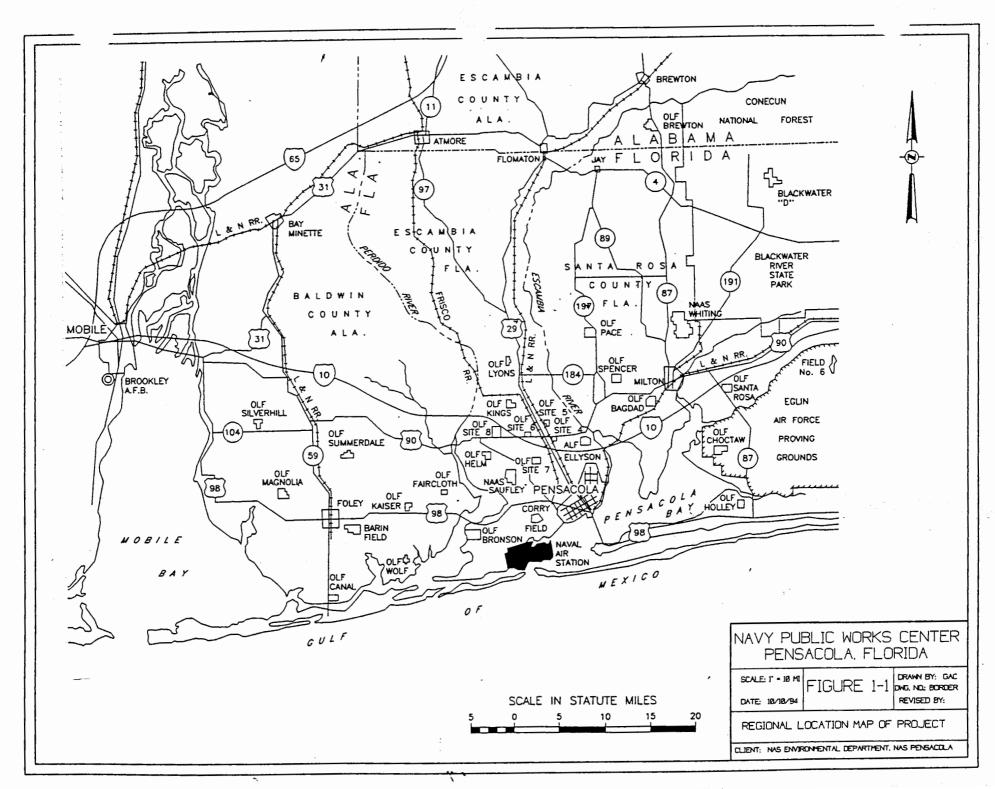
#### 1.2 SITE LOCATION AND AREA OF INVESTIGATION

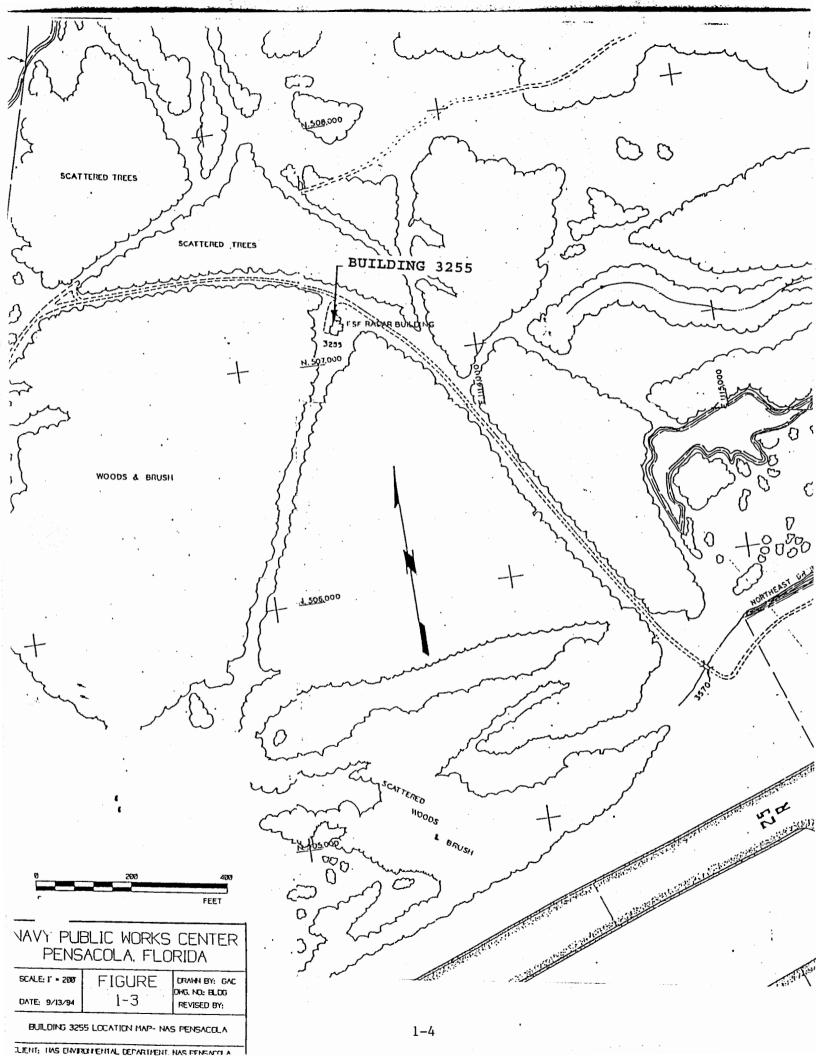
The Naval Air Station (NAS) Pensacola, Florida, is located on the western edge of Pensacola Bay on State Route 295 (Navy Boulevard; Figure 1-1). Building 3255 is located within the confines of NAS Pensacola in Section 1, Range 30W, Township 3S. The site is located approximately 1/2 mile north of Runway 25R of Sherman Field. Site location maps are included as Figures 1-2 and 1-3 showing the site in relation to surrounding features.

Land use in the vicinity of the site consists of a forestry management area and airfield. The site is surrounded on the north, east and west sides by the Bruce Tanner Forestry Management Area. Undeveloped property is located on the south side of the site. Runway 25 R, located at Sherman Field, is located approximately 1/2 mile south of the site. A gravel road is located just north of Building 3255.

#### 1.3 SITE HISTORY AND OPERATIONS

Building 3255 is an aviation radar facility which supplies radar for the airport tower located at Sherman Field aboard NAS Pensacola (See Figures 1-2 and 1-3 for location). Building 3255 was constructed in 1967. A 300 gallon underground emergency generator diesel fuel tank was also installed in 1967. The piping from this tank was also underground. The underground tank and associated piping were removed in 1987. A 300 gallon aboveground diesel tank with associated concrete secondary containment was installed in 1987 to replace the underground tank. The piping for the aboveground tank from the tank to the building was installed beneath land surface. A petroleum odor was discovered by PWC personnel during the excavation of a





utility trench in April 1992. The source of the contamination and amount of diesel fuel released are unknown. It is suspected that the source of contamination was either from the former UST and associated piping or former underground piping of the existing aboveground diesel tank. The underground piping of the aboveground tank was removed and replaced with aboveground piping in May 1992.

The location of the discovered contamination and other prominent features of the site are shown in Figure 1-4.

#### 1.4 INITIAL REMEDIAL ACTION

PWC Pensacola removed approximately 30 cubic yards of petroleum contaminated soil with a backhoe on November 30 and December 1, 1994. The soil was properly transported to and disposed in an approved soil thermal treatment facility. The limits of the soil excavation area was determined on August 4, 1994 by analyzing the soil for volatile organic compounds with an organic vapor analyzer (OVA). The areal extent of soil contamination and the limits of excavation are shown in Figure 1-5. As shown in Figure 1-5 the limits of soil excavation encompasses the areas where excess soil contamination (>10 ppm) was found. The soil was excavated to the groundwater table which is approximately 2.5 to 3.0 feet below land surface. The excavated areas were backfilled with clean soil and sodded with grass on December 2 and 5, 1994.

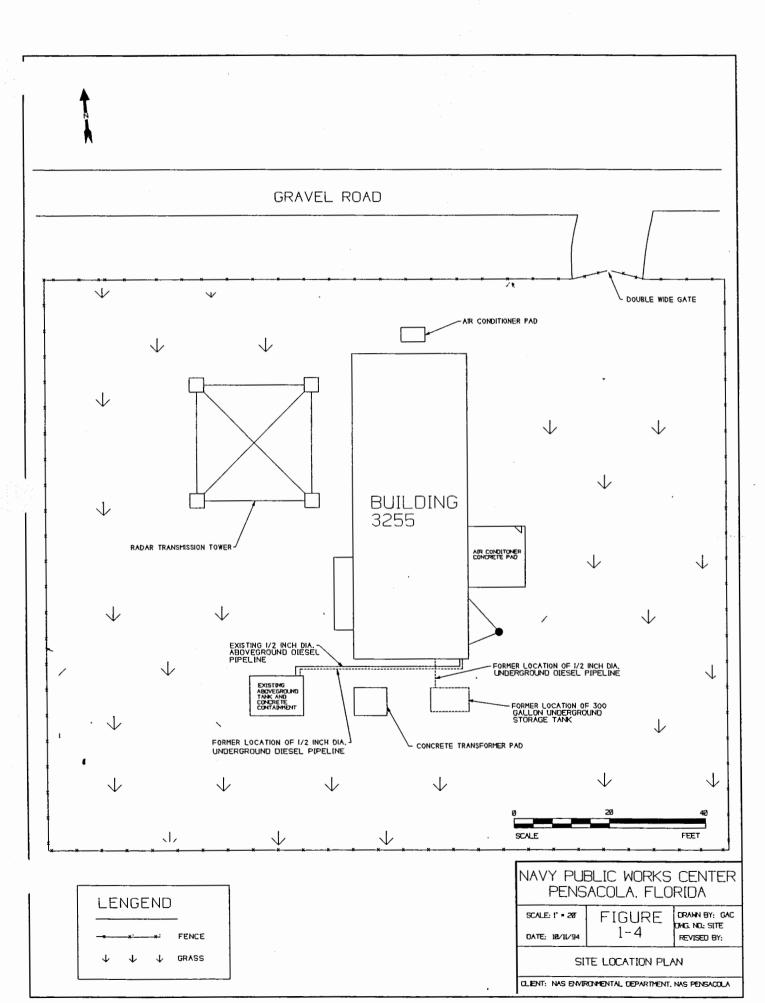
#### 1.5 RESULTS OF PREVIOUS INVESTIGATIONS

There was no information available concerning any previous investigations at the Radar Facility site (Building 3255).

#### 1.6 REGIONAL GEOLOGY AND HYDROGEOLOGY

The regional geology underlying NAS Pensacola is comprised of the Sand-and-Gravel Aquifer to a depth of approximately 400 feet, the Pensacola Clay from approximately 400 to 900 feet, and the upper and lower Floridan Aquifer from 900 to approximately 1,700 feet (G&M, 1985).

Previous investigations at other sites located at NAS Pensacola have shown that sands extend from ground surface to an elevation of approximately -35 feet below mean sea level (BMSL). Some areas at NAS Pensacola have shown that below the sands are approximately 15 feet of marine clay but the areal extent is



1-/

unknown. Underlying the clay is more sand with numerous clay lenses, the depths and dimensions of which are not well defined (G&M, 1985).

This investigation was limited to the uppermost sands above the marine clay expected at -35 feet BMSL. A series of hand auger borings performed at the site indicate that the soil from the top of land surface to the groundwater table is medium to fine grained white to light brown sand.

#### 1.7 WELL SURVEY

There are two potable water wells located at NAS Pensacola that are permitted by the Northwest Florida Water Management District. Potable water to the base is mainly supplied by potable wells located at Corry Station, located several miles to the north. The two potable water wells located a NAS Pensacola are only used to supplement the potable water wells at Corry Station when needed. None of the two wells are located with a half-mile radius of the site. Construction details of the two wells are shown in Table 1.

TABLE 1-1
CONSTRUCTION DETAILS OF WATER-SUPPLY WELLS

NAS FACILITY NUMBER	#1	#2
	696	706
Year Drilled	1942	1942
Depth Drilled	174' - 6"	178'
Lenght, outside casing	106	114'
Diameter, outside casing	24" - 100' 12" - 106'	24" – 110' 12" – 114'
Material, outside casing	steel	steel
Depth to static water level	23'	24'
Normal suction lift (wkng. level)	32'	38'
Normal yield, GPM	650	650
Test yield, GPM	u/k	u/k
Type of grout	cement	cement
Drilling method	rotary	rotary
Type of strainer	bronze	bronze
Depth to top of strainer	106'	114'
Protection from surface water?	yes	yes
Is inundation of well possible	no	no
Sale intrusion noted in past?	no	no
Has the well ever been contaminated?	no	no
Pump manufacturer's name		Layne Bowler
Model number	RKLC	RKLC
Capacity GPM	750	750
Check valve present in line?	yes	yes
Date of last servicing		maint.
Maintence schedule(day/Mo.)	daily	daily

Notes: u/k = unknown s.s. = stainless

#### 2.0 SITE ASSESSMENT

## 2.1 SOIL BORING/ASSESSMENT AND MONITORING WELL CONSTRUCTION DETAILS

PWC Pensacola initiated the investigation with the installation of 31 soil borings to a depth of approximately 2.5 feet (approximate depth to groundwater). These soil borings were installed on August 4 and 5, 1994 by Analytical Technology Inc. (ATI). The soil borings were installed using a stainless steel hand auger. The stainless steel hand auger was decontaminated between soil borings by ATI personnel using distilled water, Liquanox soap and isopropyl alcohol. Grab soil samples were collected from each soil boring at 1 and 2-2.5 foot depths. Soil samples were analyzed for volatile organic vapors by ATI personnel using an organic vapor analyzer (OVA) with a flame ionization detector. A summary of the OVA results is shown in Table 2-1. The location of soil borings and their respective OVA concentrations are shown in Figure 1-5.

Monitoring wells MW-1 through MW-10 were installed by Pensacola Testing Inc. on January 17 through 19 to a depth of approximately 12 feet below land surface (bls). The wells consist of 2-inch diameter by 10.0 feet of 0.010-inch slotted Schedule 40 PVC pipe. threaded to 2.0 feet of solid PVC riser. All wells were completed in approximately 4-inch diameter boreholes approximately 13 feet in depth using the hollow stem auger drilling method. A filter sand pack consisted of coarse silica sand (sand pack mesh size 16 to 40) and extended approximately one foot above the top of the well screen. A 6-inch bentonite seal was placed above the sand pack, and the remaining annular space was filled with cement grout. The PVC casing was brought up flush with the ground level. Steel manhole covers were placed in bore hole around the PVC riser and set with neat cement. A 8inch diameter steel manhole cover placed over the manhole. A 2' by 2' concrete pad was installed around the outside of the manhole cover at the top of the land surface. Monitoring well locations are shown in Figure 2-1. A typical monitoring well construction diagram is shown in Figure 2-2. Lithological logs for monitoring wells MW-1 through MW-10 are shown in Appendix A.

#### 2.2 GROUNDWATER FLOW DIRECTION

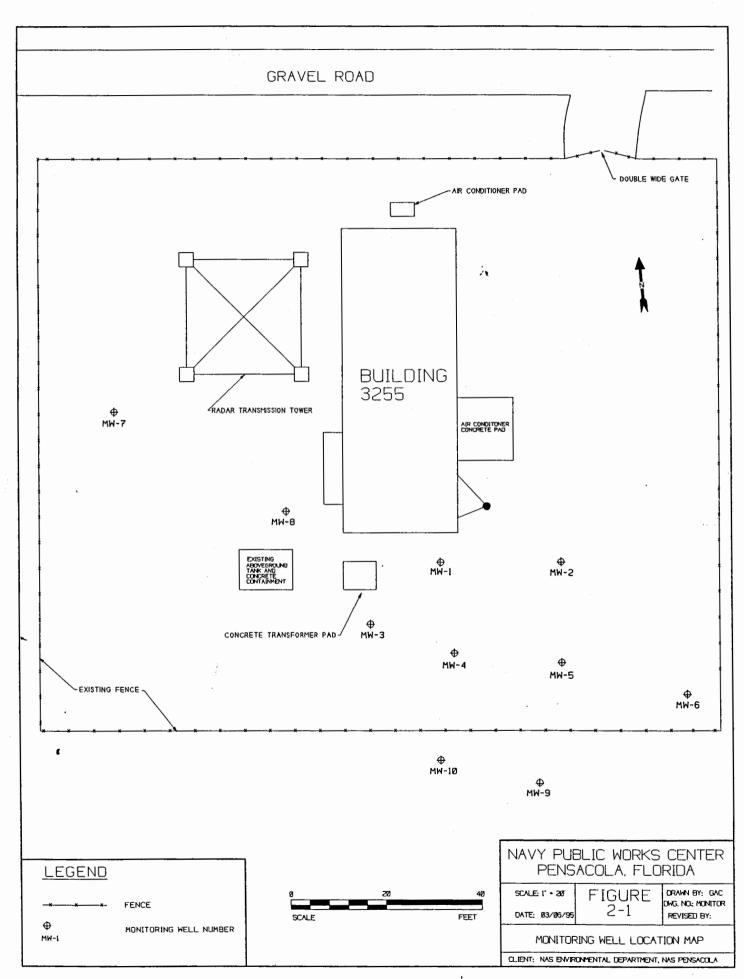
The top of casing elevations for monitoring wells MW-1 through MW-10 were surveyed by PWC survey crew on January 20, 1995. No survey bench marks were located near the site, therefore top of casing elevations were based on the concrete transformer pad (southeast corner) having an assumed elevation of 30.00 feet M.S.L.. Groundwater elevations for the groundwater level

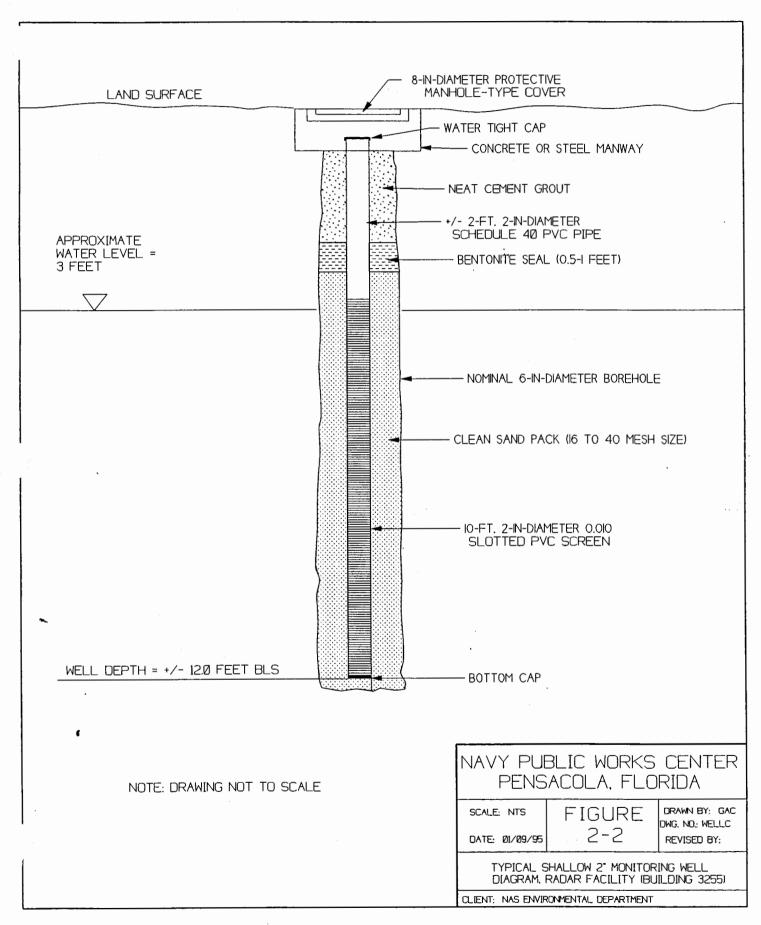
## TABLE 2-1 ORGANIC VAPOR CONTENT OF SOIL (OVA HEADSPACE SCREENING)

FIELD I.D. #	OVA
BH-1-1	60
BH-1-2	13
BH-2-1	BDL
BH-2-2	120
BH-3-1	BDL
BH-3-2	BDL
BH-4-1	BDL
BH-4-2	BDL
BH-5-1	BDL
BH-5-2	BDL
BH-6-1	BDL
BH-6-2	4
BH-7-1	BDL
BH-7-2	400
BH-8-1	BDL
BH-8-2	12
BH-9-1	5
BH-9-2	85
BH-10-1	BDL
BH-10-2	BDL
BH-11-1	BDL
BH-11-2	BDL
BH-12-1	BDL
BH-12-2	BDL
BH-13-1	BDL
BH-13-2	BDL
BH-14-1	BDL
BH-14-2	BDL
BH-15-1	BDL
BH-15-2	BDL
BH-16-1	BDL
BH-16-2	5

FIELD I.D.	OVA
#	
BH-17-1	BDL
BH-17-2	BDL
BH-18-1	BDL
BH-18-2	BDL
BH-19-1	BDL
BH-19-2	BDL
BH-20-1	BDL
BH-20-2	BDL
BH-21-1	BDL
BH-21-2	5
BH-22-1	BDL
BH-22-2	BDL
BH-23-1	BDL
BH-23-2	BDL
BH-24-1	BDL
BH-24-2	BDL
BH-25-1	BDL
BH-25-2	55 55
BH-26-1	BDL
BH-26-2	BDL
BH-27-1	BDL
BH-27-2	35
BH-28-1	BDL
BH-28-2	BDL
BH-29-1	BDL
BH-29-2	BDL
BH-30-1	BDL
BH-30-2	BDL
BH-31-1	BDL
BH-31-2	3
BH-32-2	2
	_
L	L

NOTE: All results reported in parts per million (ppm) BH = Boring Hole





measurements taken on January 26, 1995 and February 3, 1995 are shown in Table 2-2. The calculated water table elevations indicated that groundwater direction beneath the site was to the southeast. Depth to the water measurements were taken on January 26, 1995 and February 3, 1995 and are shown in Table 2-2. Groundwater flow direction is illustrated in Figure 2-3.

#### 2.3 GROUNDWATER FLOW RATE

Horizontal groundwater flow velocity was calculated using the equation V=Ki/n. Hydraulic conductivity was calculated as the average of the hydraulic conductivities estimated during three previous CAR's performed at NAS Pensacola by Geraghty and Miller and ABB Environmental, Inc.. An average hydraulic gradient was calculated from the groundwater elevation data collected from groundwater monitoring wells MW-1 and MW-6 on January 26, 1995 and February 3, 1995. Groundwater velocity at the site was determined using the average hydraulic gradient and hydraulic conductivity with an estimated pore velocity of 25%. Groundwater velocity was determined to be 0.193 ft/day. See Appendix B for groundwater flow velocity assumptions and calculations.

#### 2.4 SOIL ASSESSMENT

The extent of soil contamination at the site was determined by OVA screening. Thirty-one soil borings (BH-1 through BH-31) were performed on August 4 and 5, 1994 by Analytical Technology, Inc. (ATI) using a hand auger. Soil samples from each boring hole were collected at 1 foot below land surface (bls) and 2-2.5 feet bls by ATI personnel. No soil samples were collected and analyzed below the groundwater table (approximately 2.5-3 feet bls). ATI analyzed the soil samples for volatile organic vapor concentrations using an OVA. The soil borings were installed at and around the suspected point of release. The soil boring locations and their respective OVA screening results are shown in Figure 1-5. A summary of the OVA screening is shown in Table 2-1. Soil samples collect at the 2-foot depth from soil borings BH-2, BH-7 and BH-9 had the highest OVA results. The OVA readings ranged from 85 ppm to 400 ppm. Soil samples collected from all other soil borings, with the exception of BH-1 and BH-25, were below the 50 ppm limit for the kerosene analytical The soil sample collected at the 1-foot depth from BH-1 and the 2-foot depth from BH-25 had OVA readings of 60 ppm and 55 ppm, respectively.

The areas of soil containing greater than 10 ppm were excavated and properly disposed of by incineration. Details of the soil excavation activities are found in paragraph 1.4. No soil

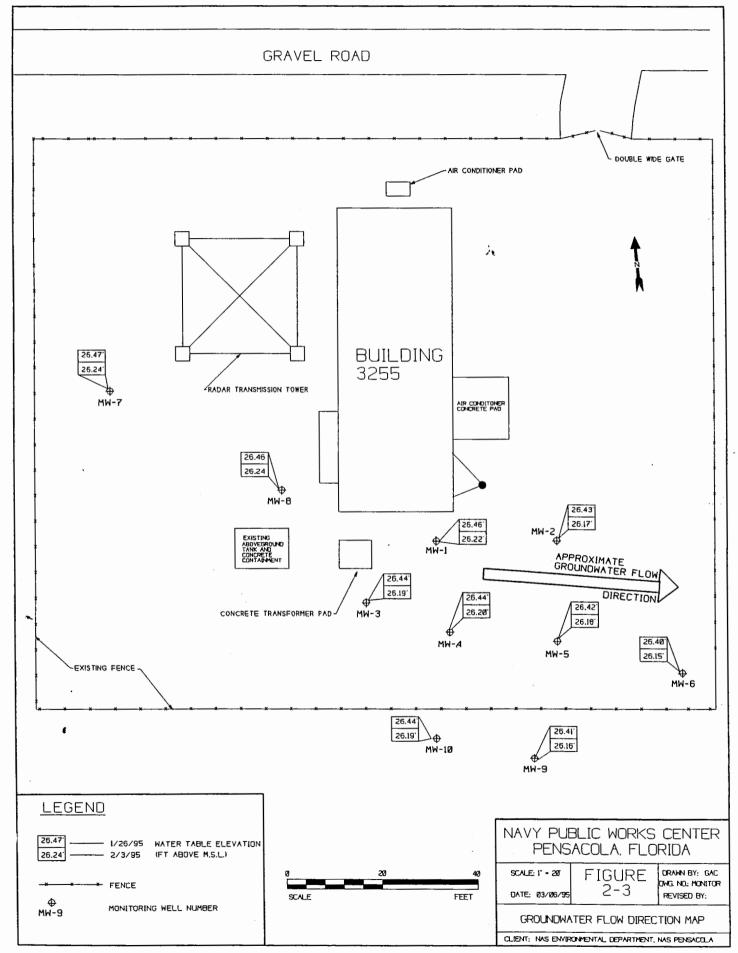
TABLE 2-2 TOP OF CASING AND GROUNDWATER ELEVATIONS

				GROUN	DWATER
WELL	TOC	DTW (	Ft)	ELEVATIO	N (Ft. M.S.L.)
NUMBER	(Ft M.S.L)	1/26/95	2/3/95	1/26/95	2/3/95
MW-1	29.38	2.92	3.16	26.46	26.22
MW-2	28.90	2.47	2.73	26.43	26.17
MW-3	29.13	2.69	2.94	26.44	26.19
MW-4	28.89	2.45	2.69	26.44	26.20
MW-5	28.89	2.47	2.71	26.42	26.18
MW-6	28.21	1.81	2.06	26.40	26.15
MW-7	29.20	2.73	2.96	26.47	23.24
MW-8	29.18	2.72	2.94	26.46	26.24
MW-9	28.39	1.98	2.23	26.41	26.16
MW-10	28.62	2.18	2.43	26.44	26.19

NOTES:

TOC = Top Of Casing DTW = Depth to Water

Assumed Elevation of Southeast Corner of Concrete Tranformer Slab To Be 30.00 Ft M.S.L.



samples were collected and screened with an OVA during installation of monitoring wells MW-1 thru MW-10 since soil samples already had been collected near each monitoring well.

#### 2.5 SITE SPECIFIC GEOLOGY

The site specific geology was determined by examination of soil samples collected during the soil boring and monitoring well installation. The shallow subsurface lithology beneath the site is characterized by a grey to light/dark brown medium to medium fine sand to a depth of 13'. Stratigraphic units are shown on lithologic logs compiled during the drilling of the groundwater monitoring wells and included in Appendix A.

#### 2.6 SURFACE WATER ASSESSMENT

No surface water was observed at the site and therefore no surface water assessment was performed for this report.

#### 2.7 GROUNDWATER QUALITY ASSESSMENT

Groundwater sampling was conducted following the methods and procedures outlined in Analytical Technology's Comprehensive Quality Assurance Plan No. 860137G. PWC Laboratory analyzed groundwater samples for Volatile Organic Aromatics, Volatile Organic Halocarbons and MTBE utilizing EPA Method 8260; Polynuclear Aromatic Hydrocarbons utilizing EPA Method 8270A; and lead utilizing EPA method 239.2. Analytical Technology, Inc. analyzed groundwater samples for Total Recoverable Petroleum Hydrocarbons and Ethylene Dibromide (EDB) utilizing EPA methods 9073 and 504, respectively. The groundwater analytical results for samples collected from monitoring wells MW-1 thru MW-10 are shown in Appendix C.

ATI personnel collected groundwater samples from monitoring wells MW-1 through MW-10 on February 3, 1995. No volatile organic aromatic or volatile organic halocarbons were detected in groundwater monitoring wells MW-6 thru MW-10. Benzene was detected in groundwater samples collected from monitoring wells MW-1, MW-2, MW-3 and MW-5 at concentrations of 26 parts per billion (ppb), 6 ppb, 1 ppb and 2 ppb, respectively. Only monitoring well MW-3 met the State Target Level of 1 ppb for benzene. Ethylbenzene was detected in groundwater samples collected from monitoring wells MW-1 thru MW-5. Monitoring well MW-1 had the highest reported ethylbenzene concentration (55 ppb) while MW-4 had the lowest reported concentration (1 ppb). Monitoring wells MW-1, MW-2, MW-3 and MW-5 exceeded the State quidance concentration of 2 ppb for ethylbenzene. Toluene was

detected in groundwater samples collected from monitoring wells MW-1, MW-2, MW-3 and MW-5 at concentrations of 22 ppb, 5 ppb, 2 ppb and 1 ppb, respectively which were all below the State guidance concentration of 24 ppb. Xylenes (Total) was detected in groundwater samples collected from monitoring wells MW-1 thru MW-5. Only Xylene (Total) concentrations reported for monitoring wells MW-1 exceeded the State guidance concentration of 50 ppb for xylene (Total). Monitoring wells MW-1 and MW-2 were the only monitoring wells exceeding the state target level of 50 ppb for Total Volatile Organic Aromatics (VOA). The reported Total VOA concentrations for monitoring wells MW-1 and MW-2 were 383 ppb and 53 ppb, respectively. A summary of the volatile organic aromatic and volatile organic halocarbon analytical results for the groundwater samples collected from MW-1 thru MW-10 is shown in Table 2-3.

No polynuclear Aromatic hydrocarbons (PAH's) were detected in the groundwater samples collected for monitoring wells MW-5 thru MW-Compounds fluorene, naphthalene, 1-methylnaphthalene and 2methylnaphthalene were detected in monitoring wells MW-3 and MW-However, the detected concentrations were below both the method detection limit and State Target level for these Naphthalene, 1-methylnaphthalene and 2compounds. methylnaphthalene were each detected at 10 ppb from groundwater samples collected from MW-2. The concentrations met the State Target level of 100 ppb for Total Naphthalenes. Fluorene, naphthalene, 1-methylnaphthalene and 2-methylnaphthalene were detected in groundwater samples collected from monitoring well MW-1 at 10 ppb, 63 ppb, 80 ppb and 113 ppb, respectively. The detected concentrations of Total Naphthalenes (256 ppb) in well MW-1 exceeded the State Target level of 100 ppb for Total Naphthalenes. The detected concentration of Fluorene in monitoring well MW-1 was equal to the State Target level of 10 ppb for individual PAH's (excluding total naphthalenes). summary of the PAH analytical results for the groundwater samples collected from MW-1 thru MW-10 is shown in Table 2-4.

No EDB concentrations were detected in the groundwater samples collected from monitoring wells MW-1 thru MW-10. Total Recoverable Petroleum Hydrocarbon (TRPH) was detected in the groundwater samples collected from monitoring well MW-1 at 1 ppm, which was below the State Target level of 5 ppm. TRPH was not detected in groundwater samples collected from monitoring wells MW-2 thru MW-10. Total lead (dissolved and suspended) was detected in groundwater samples collected from each monitoring well with the exception of monitoring well MW-6. The State Target level of 50 ppb for lead was exceeded in groundwater samples collected from monitoring wells MW-9 and MW-10, which had detected concentrations of 51 ppb each. However, the lead results for these monitoring wells included both suspended and

TABLE 2-3 SUMMARY OF GROUNDWATER SAMPLE LABORATORY RESULTS FOR VOLATILE ORGANIC COMPOUNDS

		MONITORING WELLS									
PARAMETER	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	
Benzene	26	6	1	BDL	2	BDL	BDL	BDL	BDL	BDL	
Ethylbenzene	55	6	3	1	3	BDL	BDL	BDL	BDL	BDL	
Toluene	22	5	2	BDL	1	BDL	BDL	BDL	BDL	BDL	
Xylenes(Total)	280	36	25	9	4	BDL	BDL	BDL	BDL	BDL	
Total BTEX	383	53	31	10	10	BDL	BDL	BDL	BDL	BDL .	
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		1									

NOTES:

All results reported in parts per billion (ppb) unless otherwise noted.

BDL = Below detection limits

Total BTEX = Summation of benzene, toluene, ethylbenzene and xylenes (total)

# TABLE 2-4 SUMMARY OF GROUNDWATER SAMPLE LABORATORY RESULTS FOR POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs)

PARAMETER		MONITORING WELL NUMBER								
	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW7	MW-8	MW-9	MW-10
FLUORENE NAPHTHALENE 1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE	10 63 80 113	BDL 10 10	1* 4* 4* 5*	BDL 1* 2* 1*	BDL BDL BDL BDL	BDL BDL BDL BDL	BDL BDL BDL BDL	BDL BDL BDL BDL	BDL BDL BDL BDL	BDL BDL BDL
							<i>h</i>			

NOTES:

\* Compound detected, but below the method detection limit. BDL= Below detection limits

All results are reported in parts per billion (ppb) unless otherwise noted

dissolved lead since the groundwater samples were not filtered. Both these wells are upgradient of the source and it appears that the elevated lead levels are due to natural lead in the groundwater and not from the diesel release. A summary of the lead analytical results for the groundwater samples collected from MW-1 thru MW-10 is shown in Table 2-5.

Groundwater Technology Government Services, Inc. (GSI) gauged monitoring wells MW-1 thru MW-10 for possible free-phase petroleum hydrocarbons on January 26, 1995. The interface probe was decontaminated between well gaugings with the use of probe wiper and solutions of alconox and water, isopropyl alcohol and water and de-ionized water No free-phase petroleum hydrocarbons were detected in monitoring wells MW-1 thru MW-10 using the oil/water interface probe.

#### TABLE 2-5 SUMMARY OF GROUNDWATER SAMPLE LABORATORY RESULTS FOR TRPH, EDB and LEAD

			MONITORII	IG WELL N	JMBER					
PARAMETER	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
TRPH (ppm) EDB LEAD	1 BDL 11	BDL BDL 5	BDL BDL 8	BDL BDL 8	BDL BDL 12	BDL BDL BDL	BDL BDL 13	BDL BDL 26	BDL BDL 51	BDL BDL 51

NOTES: All Results Are Reported in parts per billion (ppb) unless otherwise noted.

BDL = Below detection limits. EDB = 1,2 Dibromoethane

' TRPH = Total Recoverable Petroleum Hydrocarbons

#### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 CONCLUSIONS

- \* The source of the discharge is eliminated and the approximate gallons of diesel fuel released is unknown.
- \* Initial remedial actions included the removal and proper disposal of approximately 30 cubic yards of contaminated soil.
- \* No public or private water supply wells were identified within a half mile radius of the site.
- \* Thirty-one soil borings were performed to the groundwater table in order to delineate the extent of compacted soils. All contaminated soil above 10 ppm was removed and properly disposed of.
- \* Ten groundwater monitoring wells (MW-1 thru MW-10) were installed on January 17 19, 1995 and groundwater samples were collected on February 3, 1995 and analyzed for the kerosene analytical group listed in FAC 62-770.600(8)(b).
- \* Groundwater depths measured in monitoring wells MW-1 thru MW-10 on January 26, 1995 and February 3, 1995 indicates the groundwater flow direction on those days to be toward the southeast.
- \* Monitoring wells MW-1 thru MW-10 were sampled and analyzed for petroleum constituents and lead. Results indicate relatively low levels of dissolved hydrocarbons in monitoring wells MW-2 thru MW-5 and somewhat higher levels in the source well MW-1. No petroleum hydrocarbons were detected in monitoring wells MW-6 thru MW-10.
- \* Lead was detected in all monitoring wells except MW-6. Only monitoring wells MW-9 and MW-10 had levels (51 ppb) above the State Target Level of 50 ppb.
- \* No free product was detected in monitoring wells MW-1 thru MW-10.

#### 3.2 RECOMMENDATIONS

PWC Pensacola recommends, based upon the findings and conclusions, that a Monitoring Only Plan be implemented for the Radar Facility Site (Building 3255) located at NAS Pensacola as follows:

- (1) Monitoring wells MW-1, MW-6 and MW-8 be sampled and analyzed for volatile organic aromatic compounds by EPA Method 602 and polynuclear aromatic hydrocarbon compounds by EPA Method 610, quarterly for one year.
- (2) Monitoring well MW-1, which had the highest petroleum hydrocarbon concentrations, is considered the source monitoring well. Monitoring well MW-8 and MW-6 are considered the upgradient and downgradient monitoring wells, respectively.

#### 4.0 PROFESSIONAL REVIEW CERTIFICATION

The Contamination Assessment contained in this report was prepared using sound, hydrogeologic principles and judgement. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned engineer should be notified to evaluate the effects of any additional information on the assessment described in this report. This Contamination Assessment Report was developed for the diesel fuel leak located South of Building 3255 at the Naval Air Station, Pensacola, Florida and should not be construed to apply to any other site.

G. A. CAMPBELL Professional Engineer P.E. No. 38572

Date

#### 5.0 REFERENCES

Geraghty and Miller. January 1987. Evaluation of Hydrocarbons in Shallow Ground Water from Aviation Turbine Fuel (JP-5) Pipeline Leak, NAS Pensacola, Florida.

Roger Durham. August 1992. Contamination Assessment Report: Site 3810N Naval Aviation Depot, Naval Air Station, Pensacola, Florida.

Roger Durham and Pamela J. Wagner. February 1993. Contamination Assessment Report: Site 3221SW, Naval Aviation Depot, Naval Air Station, Pensacola, Florida. APPENDIX A

LITHOLOGIC LOGS

				LITHOLOGIC LOC	<u> </u>	
	PRO.	JECT	INFORMATION	WELL CONST	RUCT	ION DETAILS
			NAS PENSACOLA		.L ESTING	10NITORING WELL #: MW-1 TOTAL DEPTH: 12-FEET HOLE DIAMETER: 4-FEET DEPTH TO WATER: 3.8-FEET
	N P	AS PE ENSA	NG 3255 ENSACOLA COLA, FLORIDA CT MANGER:	CASING  TYPE: SCHEDULE 40 PVC  DIAMETER: 2-INCH	DIA	SCREEN PE: SCHEDULED 40 NMETER: 2-INCH NGTH: 12-FEET
			CAMPBELL	LENGTH: 2-FEET		OT SIZE: .Ø1-INCH
	ОЕРТН	OVA		LITHOLOGY		COMMENTS
			0-3 FEET. ORAN	GE CLAY FILL		
5			$\sqsubseteq$			□ DENOTES WATER LEVEL     □ DURING DRILLING
			3 - 12 FEET. GR	AY SAND, MEDIUM COARSE		
10						
				<u>,                                      </u>		
<b>-1</b> 5						
			·			
20						

				3			
	PRO.	JECT	INFORMATION	WELL CONST	[RUC]	TION DETAILS	
			NAS PENSACOLA .OCATION:	DATE DRILLED: 1/17/95 LOGGED BY: GREG CAMPBEL DRILLING CO.: PENSACOLA T METHOD: HOLLOW STEM AUG	LL ESTING	TOTAL DEPTH: 12 HOLE DIAMETER: 4	-FEET -FEET
	N P	IAS PI ENSA	NG 3255 ENSACOLA COLA. FLORIDA	CASING  TYPE: SCHEDULE 40 PVC  DIAMETER: 2-INCH	DI/	SCREEN PE: SCHEDULED 40 AMETER: 2-INCH	
			CT MANGER: CAMPBELL	LENGTH: 2-FEET	I .	NGTH: 12-FEET OT SIZE: .Ø1-INCH	
	ОЕРТН	OVA		LITHOLOGY		COMMENTS	
_			Ø - 4 FEET. GRAIN SAND	GRAY/BROWN SILTY MEDIUM			
5						☑ DENOTES APPROX WATER LEVEL DU DRILLING	
			4 - 12 FEET.	. LIGHT BROWN MEDIUM GRAIN	SAND		
10							
<b>.1</b> 5							
20	•						

	LITHOLOGIC LOG								
PRO.	JECT	INFORMATION	WELL CONSTRUCTION DETAILS						
		IAS PENSACOLA OCATION:	DATE DRILLED: 1/17/95 MONITORING WELL #: MW LOGGED BY: GREG CAMPBELL TOTAL DEPTH: 12- DRILLING CO.: PENSACOLA TESTING HOLE DIAMETER: 4-F METHOD: HOLLOW STEM AUGER DEPTH TO WATER: 3.8						
N	IAS PE	NG 3255 ENSACOLA COLA. FLORIDA	TYPE: SCHEDULE 40 PVC   DI		SCREEN TYPE: SCHEDULED 40 DIAMETER: 2-INCH LENGTH: 12-FEET SLOT SIZE: 01-INCH				
	PROJECT MANGER: GREG CAMPBELL		DIAMETER: 2-INCH LENGTH: 2-FEET						
ОЕРТН	OVA		LITHOLOGY		COMMENTS				
		0 - 2 FEET	, DARK BROWN TOPSOIL						
	,	≥ 2 - 12 FEE1	r. LIGHT BROWN SAND		DENOTES APPROXIMATE GROUNDWATER DEPTH .				
7									
5									
7									

	LITHOLOGIC LOG								
	PRO	JECT	INFORMATION	TION DETAILS					
	CLIENT: NAS PENSACOLA  SITE LOCATION: BUILDING 3255 NAS PENSACOLA PENSACOLA, FLORIDA  PROJECT MANGER: GREG CAMPBELL			DATE DRILLED: 1/17/95 LOGGED BY: GREG CAMPBEL DRILLING CO.: PENSACOLA T METHOD: HOLLOW STEM AUC	TOTAL DEPTH: 12-FEET HOLE DIAMETER: 4-FEET				
				CASING  TYPE: SCHEDULE 40 PVC	SCREEN PE: SCHEDULED 40 AMETER: 2-INCH				
				DIAMETER: 2-INCH LENGTH: 2-FEET	i .	LENGTH: 12-FEET SLOT SIZE: Ø1-INCH			
	ОЕРТН	OVA		LITHOLOGY		COMMENTS			
			Ø - 2 FE	ET. DARK BROWN TOPSOIL					
5			-			□ DENOTES APPROXIMATE WATER LEVEL DURING DRILLING			
		,	2 - 12 FEET. I	_IGHT BROWN, MEDIUM COARSE	. SAND	. ,			
10									
15									
20									

	LITHOLOGIC LOG						
	PROJECT INFORMATION WELL CONSTRUCT				TION DETAILS		
	CLIENT: NAS PENSACOLA  SITE LOCATION: BUILDING 3255 NAS PENSACOLA PENSACOLA, FLORIDA			DATE DRILLED: 1/17/95 LOGGED BY: GREG CAMPBEL DRILLING CO.: PENSACOLA TO METHOD: HOLLOW STEM AUG	L ESTING	MONITORING WELL #: MW-5 TOTAL DEPTH: 12-FEET HOLE DIAMETER: 4-FEET DEPTH TO WATER: 3.0-FEET	
				CASING  TYPE: SCHEDULE 40 PVC	SCREEN PE: SCHEDULED 40 AMETER: 2-INCH		
		PROJECT MANGER: GREG CAMPBELL		DIAMETER: 2-INCH   LENGTH: 2-FEET   LEN		NGTH: 12-FEET OT SIZE: .Ø1-INCH	
	ОЕРТН	OVA		LITHOLOGY		COMMENTS	
-			Ø - 2 FE	ET, DARK BROWN TOPSOIL			
5			- ≌			DENOTES APPROXIMATE WATER LEVEL DURING DRILLING	
		,	2 - 12 FEET. L	.IGHT BROWN, MEDIUM COARSE,	SAND		
10				•			
15							
20	•						
					_		

	··				
PRO.	PROJECT INFORMATION WELL CONSTRUCT				ION DETAILS
l		NAS PENSACOLA	DATE DRILLED: 1/18/95 MONITORING WELL #: MILLING CO.: PENSACOLA TESTING HOLE DIAMETER: 4 METHOD: HOLLOW STEM AUGER DEPTH TO WATER: 3		
N P	AS PE	NG 3255 ENSACOLA COLA, FLORIDA	CASING  TYPE: SCHEDULE 40 PVC  DIAMETER: 2-INCH	SCREEN PE: SCHEDULED 40 AMETER: 2-INCH NGTH: 12-FEET OT SIZE: .01-INCH	
I		CT MANGER: CAMPBELL	LENGTH 2-FEFT		
ОЕРТН	OVA		LITHOLOGY		COMMENTS
	į	Ø - 2 FE	ET. ORGANIC PEAT		
5		- <del>-</del>			DENOTES APPROXIMATE WATER LEVEL DURING DRILLING
	•	2 - 12 FEET. E	BROWN, MEDIUM COARSE, SAND		•
10			·		
15					
20					

				- 11.2				
	PROJECT INFORMATION			WELL CONSTRUCTION DETAILS				
	CLIENT: NAS PENSACOLA  SITE LOCATION: BUILDING 3255 NAS PENSACOLA PENSACOLA, FLORIDA			DATE DRILLED: 1/18/95 LOGGED BY: GREG CAMPBEL DRILLING CO.: PENSACOLA T METHOD: HOLLOW STEM AUG	L ESTING	TOTAL DEPTH: HOLE DIAMETER:	12-FEET 4-FEET	
				CASING  TYPE: SCHEDULE 40 PVC  DIAMETER: 2-INCH	)	SCREEN PE: SCHEDULED 40 METER: 2-INCH		
	PROJECT MANGER: GREG CAMPBELL			LENGTH 2-EEET LEN		NGTH: 12-FEET OT SIZE: .Ø1-INCH		
	DEPTH	OVA		LITHOLOGY		COMMENT	S	
-			0 - 1 FEET	. DARK BROWN SAND				
5		,	≦ 1 - 8 FEET	. LIGHT BROWN SAND		□ DENOTES APPR WATER LEVEL I DRILLING	DURING	
10			8 - 12 FEE MEDIUM CO	T. DARK BLACK ORGANIC. ARSE SAND				
15								
20	•							

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	PRO.	PROJECT INFORMATION WELL CONSTRUCT				TON DETAILS	
	CLIENT: NAS PENSACOLA  SITE LOCATION: BUILDING 3255 NAS PENSACOLA PENSACOLA, FLORIDA				MONITORING WELL #: MW-8 TOTAL DEPTH: 12-FEET HOLE DIAMETER: 4-FEET DEPTH TO WATER: 3.0-FEET		
				<u>CASING</u> TYPE: SCHEDULE 40 PVC  DIAMETER: 2-INCH	DI/	SCREEN PE: SCHEDULED 40 METER: 2-INCH	
			CT MANGER: CAMPBELL	LENGTH 2-FFET		NGTH: 12-FEET OT SIZE: .Ø1-INCH	
	DEPTH	OVA		LITHOLOGY		COMMENTS	
-			Ø - 2 FE	ET, DARK ORGANIC SAND			
5			= 2 12 5			DENOTES APPROXIMATE WATER LEVEL DURING DRILLING	
ΙØ		•	2 - 12 r	EET. LIGHT BROWN SAND		•	
				•			
15					•		
20	•						
				·			

[				LITHOLOGIC LOC	<u> </u>		
						TION DETAILS	, '
			IN OKTATION	WELL CONSTRUCTION DETAILS  DATE DRILLED: 1/19/95 MONITORING WELL #: M			
	CLIENT: NAS PENSACOLA			LOGGED BY: GREG CAMPBEL DRILLING CO.: PENSACOLA T	TOTAL DEPTH: HOLE DIAMETER:	12-FEET 4-FEET	
			OCATION: NG 3255	METHOD: HOLLOW STEM AUG	EK T	DEPTH TO WATER:  SCREEN	3.0-FEET
	BUILDING 3255 NAS PENSACOLA PENSACOLA. FLORIDA			TYPE: SCHEDULE 40 PVC DIA		PE: SCHEDULED 4Ø AMETER: 2-INCH	
			CT MANGER: CAMPBELL	DIAMETER: 2-INCH   LE		NGTH: 12-FEET OT SIZE: .Ø1-INCH	
	ОЕРТН	OVA		LITHOLOGY		COMMENT	S
-			0 - 2 FE	ET. DARK ORGANIC SAND			
			$\subseteq$		·	DENOTES APPR	
5						DENOTES APPR WATER LEVEL DRILLING	
		,	2 - 12 F	EET. LIGHT BROWN SAND. MED!	IUM		
				COARSE SAND			
10							,
						:	
15							
					•		
20							
				:			

ı				LITHOLOGIC LOC				
	PRO.	JECT	INFORMATION		WELL CONSTRUCTION DETAILS			
	CLIENT: NAS PENSACOLA SITE LOCATION:				MONITORING WELL #: MW-10 TOTAL DEPTH: 12-FEET HOLE DIAMETER: 4-FEET DEPTH TO WATER: 3.0-FEET			
	BUILDING 3255 NAS PENSACOLA PENSACOLA, FLORIDA  PROJECT MANGER: GREG CAMPBELL			CASING		SCREEN		
				TYPE: SCHEDULE 40 PVC   n		PE: SCHEDULED 40 AMETER: 2-INCH		
				DIAMETER: 2-INCH   LENGTH: 2-FEET   LE	NGTH: 12-FEET OT SIZE: .Ø1-INCH			
	DEPTH	OVA		LITHOLOGY		COMMENTS		
-			Ø - 3 FE	ET. BLACK ORGANIC SAND				
	3 - 12 FEET. COAR				. <u> </u>	□ DENOTES APPROXIMATE		
5				EET. LIGHT BROWN SAND. MEDIUM OARSE SAND		— WATER LEVEL DURING DRILLING		
-								
10								
15								
					•			
20								
					·			

# APPENDIX B

GROUNDWATER FLOW VELOCITY CALCULATIONS

#### GROUNDWATER FLOW VELOCITY CALCUALTIONS

V = Ki/n

Where

V = groundwater flow velocity
K = hydraulic conductivity\* (as an average of
Geraghty & Miller (1987), Site 3810 N (1992) and
Site 3221 SW ( 1993) = 48.3 ft/day
i = gradient (elevation/distance
n = porosity, estimated at 25%

January 26, 1995 i = 26.46' - 26.4' = 0.001 ft/ft

February 3, 1995 i = 26.22' - 26.15' = 0.001 ft/ft

Average gradient = i = 0.001 ft/ft

Average Velocity =  $V = 48.3 \text{ ft/day} \times 0.001 \text{ ft/ft} = 0.193 \text{ ft/day}$ 0.25

\* Geraghty and Miller. January 1987. Evaluation of Hydrocarbons in Shallow Ground Water from Aviation Turbine Fuel (JP-5) Pipeline Leak at the NAS Pensacola, Florida

Roger Durham. August 1992. Contamination Assessment Report: Site 3810N Naval Aviation Depot, Naval Air Station, Pensacola Florida.

Roger Durham and Pamela J. Wagner. February 1993. Contamination Assessment Report: Site 3221SW, Naval Aviation Depot, Naval Air Station, Pensacola, Florida.

# APPENDIX C

GROUNDWATER ANALYTICAL RESULTS

Analysis Report

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Analysis: EDB BY METHOD 504

Accession: Client: Project Number: Project Name: Project Location: Department:

502216 NAS, CO, PWC N/S N/S

RADAR STATION SEMI-VOLATILE FUELS

[0] Page 1 Date 14-Feb-95

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#### "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S N/S

Project Number: Project Name: Project Location:

RADAR STATION

Test: EDB BY METHOD 504
Analysis Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988
Extraction Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988

Matrix:

GROUNDWATER

OC Level:

Lab Id:

Client Sample Id:

001

Sample Date/Time:

03-FEB-95 1110

MW-7

Received Date:

04-FEB-95

Batch: EDW016

Blank: A

Dry Weight %:

N/A

Extraction Date:

13-FEB-95

Analysis Date:

13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

ETHYLENE DIBROMIDE BROMOFLUOROBENZENE (ECD)

ANALYST

UG/L Afra %REC/SURR INITIALS

ND 109 KW

0.02 90-116

[0] Page 2 Date 14-Feb-95

"FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S N/S

Project Number: Project Name: Project Location:

Test:

RADAR STATION

Analysis Method: Extraction Method:

EDB BY METHOD 504 504 / EPA / 600 / 04-88 / 039, Dec. 1988 504 / EPA / 600 / 04-88 / 039, Dec. 1988

Matrix:

GROUNDWATER

QC Level:

Lab Id:

Client Sample Id:

002

Sample Date/Time:

03-FEB-95 1120

MW-8

Received Date:

04-FEB-95

Batch: EDW016

Blank: A

Dry Weight %:

N/A

Extraction Date:

13-FEB-95

Analysis Date:

13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

0:

ETHYLENE DIBROMIDE BROMOFLUOROBENZENE (ECD) ANALYST

UG/L %REC/SURR **INITIALS** 

ND 110 KW

0.02 90-116

Compared Scattering & Section 1995

(0) Page 3 Date 14-Feb-95

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# "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S N/S

Project Number: Project Name: Project Location:

RADAR STATION

Test:

EDB BY METHOD 504

Analysis Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988 Extraction Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988

GROUNDWATER

Matrix: QC Level:

Ι

Lab Id:

003 Client Sample Id:

MW-9

Dry Weight %:

N/A

Sample Date/Time:

03-FEB-95 1300

Received Date: 04-FEB-95

Extraction Date: Analysis Date:

13-FEB-95 13-FEB-95

Parameter:

Blank: A

Batch: EDW016

Units:

Results:

Rpt Lmts:

Q:

ETHYLENE DIBROMIDE BROMOFLUOROBENZENE (ECD)

UG/L %REC/SURR INITIALS

ND 110 KW

0.02 90-116

Comments:

ANALYST

(0) Page 4 Date 14-Feb-95

## "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC N/S N/S

Project Number: Project Name: Project Location:

Test:

RADAR STATION EDB BY METHOD 504

Analysis Method:

Extraction Method:

504 / EPA / 600 / 04-88 / 039, Dec. 1988 504 / EPA / 600 / 04-88 / 039, Dec. 1988

Matrix: QC Level:

GROUNDWATER

004

Lab Id:

Sample Date/Time: Received Date:

03-FEB-95 1400

Client Sample Id:

MW-10

04-FEB-95

Batch: EDW016

Blank: A

Dry Weight %:

N/A

Extraction Date: Analysis Date:

13-FEB-95 13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

ETHYLENE DIBROMIDE

BROMOFLUOROBENZENE (ECD)

UG/L %REC/SURR ИD 107 0.02 90-116

ANALYST

INITIALS KW

[0) Page 5 Date 14-Feb-95

# "FINAL REPORT FORMAT - SINGLE"

Accession: Client:

502216

NAS, CO, PWC

N/S

Project Number: Project Name: Project Location:

N/S

Tesť:

RADAR STATION EDB BY METHOD 504

Analysis Method: Extraction Method:

504 / EPA / 600 / 04-88 / 039, Dec. 1988 504 / EPA / 600 / 04-88 / 039, Dec. 1988 GROUNDWATER

Matrix:

QC Level:

Ι

Lab Id:

005

Sample Date/Time: Received Date:

03-FEB-95 1430 04-FEB-95

Client Sample Id:

MW-6

Extraction Date:

13-FEB-95

Batch: EDW016

Blank: A

Dry Weight %:

N/A

Analysis Date:

13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

ETHYLENE DIBROMIDE BROMOFLUOROBENZENE (ECD)

UG/L %REC/SURR

ND 108 0.02

ANALYST

INITIALS

KW

90-116

(0) Page 6 Date 14-Feb-95

"FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S N/S

Project Number: Project Name: Project Location:

RADAR STATION

Test:

Analysis Method: Extraction Method:

EDB BY METHOD 504 504 / EPA / 600 / 04-88 / 039, Dec. 1988 504 / EPA / 600 / 04-88 / 039, Dec. 1988

Matrix:

GROUNDWATER Ι

OC Level:

Lab Id:

006

MW-5

Sample Date/Time: Received Date:

03-FEB-95 1515 04-FEB-95

Client Sample Id:

Extraction Date:

13-FEB-95

Batch: EDW016

Blank: A

Dry Weight %:

N/A

Analysis Date:

13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

ETHYLENE DIBROMIDE BROMOFLUOROBENZENE (ECD)

%REC/SURR

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1

Q:

ANALYST

INITIALS

106 KW

90-116

[0) Page 7 Date 14-Feb-95

## "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S N/S

Project Number: Project Name: Project Location:

Test:

Analysis Method:

Extraction Method:

RADAR STATION EDB BY METHOD 504 504 / EPA / 600 / 04-88 / 039, Dec. 1988 504 / EPA / 600 / 04-88 / 039, Dec. 1988

GROUNDWATER

Matrix: QC Level:

Lab Id:

MW-2

007

Sample Date/Time: Received Date:

03-FEB-95 1530

Client Sample Id:

04-FEB-95

Batch: EDW016

Blank: A

Dry Weight %:

N/A

Extraction Date: Analysis Date:

13-FEB-95 13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

ETHYLENE DIBROMIDE

0.02

UG/L %REC/SURR BROMOFLUOROBENZENE (ECD) ANALYST

INITIALS

ND 102 KW

90-116

[0) Page 8 Date 14-Feb-95

## "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S

Project Number: Project Name: Project Location:

N/S

Test:

RADAR STATION EDB BY METHOD 504

Analysis Method: Extraction Method:

504 / EPA / 600 / 04-88 / 039, Dec. 1988 504 / EPA / 600 / 04-88 / 039, Dec. 1988

Matrix:

GROUNDWATER

QC Level:

800

Lab Id: Client Sample Id:

03-FEB-95 1545 Sample Date/Time:

MW-4

Received Date:

04-FEB-95

Batch: EDW016

Blank: A

Dry Weight %:

N/A

Extraction Date:

13-FEB-95

Analysis Date:

13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

ETHYLENE DIBROMIDE

BROMOFLUOROBENZENE (ECD)

UG/L %REC/SURR INITIALS

ND 111 KW

0.02 90-116

ANALYST

[0) Page 9 Date 14-Feb-95

#### "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S

Project Number: Project Name: Project Location:

RADAR STATION

Test: EDB BY METHOD 504
Analysis Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988
Extraction Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988
Matrix: GROUNDWATER

QC Level:

009

Sample Date/Time: Received Date:

03-FEB-95 1600

Lab Id: Client Sample Id:

MW-3

04-FEB-95

Batch: EDW016

Extraction Date: Analysis Date:

13-FEB-95 13-FEB-95

Blank: A

Dry Weight %:

N/A

Parameter:

Units:

Results:

Rpt Lmts:

0:

ETHYLENE DIBROMIDE BROMOFLUOROBENZENE

(ECD)

111

0.02 90-116

ANALYST

UG/L %REC/SURR INITIALS KW

[0) Page 10 Date 14-Feb-95

## "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC N/S N/S

Project Number: Project Name:

Project Name:

Project Location: RADAR STATION

Test: EDB BY METHOD 504

Analysis Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988

Extraction Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988

GROUNDWATER

Matrix: QC Level:

Lab Id:

010

Sample Date/Time: Received Date:

03-FEB-95 1620

Client Sample Id:

MW-1

04-FEB-95

Batch: EDW016 Blank: A

Dry Weight %:

N/A

Extraction Date: Analysis Date:

13-FEB-95 13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

ETHYLENE DIBROMIDE

BROMOFLUOROBENZENE (ECD) ANALYST

UG/L %REC/SURR INITIALS

ND 100 KW

0.02 90-116

[0) Page 11 Date 14-Feb-95

"FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S N/S

Project Number: Project Name:

Project Location:

Test:

RADAR STATION EDB BY METHOD 504

Analysis Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988 Extraction Method: 504 / EPA / 600 / 04-88 / 039, Dec. 1988

GROUNDWATER

Matrix: QC Level:

Lab Id: Client Sample Id:

011

MW-1 (DUP)

Sample Date/Time:

03-FEB-95 1620

Received Date:

04-FEB-95

Batch: EDW016

Blank: A

Dry Weight %:

N/A

Extraction Date: Analysis Date:

13-FEB-95 13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

ETHYLENE DIBROMIDE BROMOFLUOROBENZENE (ECD)

UG/L %REC/SURR INITIALS

ND 114 KW

0.02 90-116

Comments:

ANALYST

[0) Page 12 Date 14-Feb-95

"FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S N/S

Project Number: Project Name: Project Location:

RADAR STATION

Test:

Analysis Method: Extraction Method:

EDB BY METHOD 504 504 / EPA / 600 / 04-88 / 039, Dec. 1988 504 / EPA / 600 / 04-88 / 039, Dec. 1988

Matrix:

GROUNDWATER

OC Level:

Lab Id:

012

Client Sample Id:

Sample Date/Time: Received Date:

03-FEB-95 1445 04-FEB-95

EQUIPMENT BLANK

Extraction Date:

13-FEB-95

Batch: EDW016

Blank: A

Dry Weight %:

N/A

Analysis Date:

13-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

ETHYLENE DIBROMIDE BROMOFLUOROBENZENE (ECD)

UG/L %REC/SURR

ND 109

0.02 90-116

ANALYST

INITIALS KW

Analysis Report

Analysis: TOTAL PETROLEUM HYDROCARBONS (418.1)

Accession: Client: Project Number: Project Name: Project Location: Department:

502216

NAS, CO, PWC N/S N/S RADAR STATION SEMI-VOLATILE FUELS

[0) Page 1 Date 09-Feb-95

# "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S N/S

Project Number:
Project Name:
Project Location:
Test:

RADAR STATION

Test: TOTAL PETROLEUM HYDROCARBONS (418.1)
Analysis Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983

Matrix:

GROUNDWATER Ι

QC Level:

001 MW-7 Sample Date/Time: Received Date:

03-FEB-95 1110

Lab Id: Client Sample Id:

Extraction Date:

04-FEB-95 08-FEB-95

Batch: TPW032

Blank: A

Dry Weight %:

N/A

Analysis Date:

09-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

TOTAL PETROLEUM HYDROCARBON

ANALYST

MG/L INITIALS

ND MV .1

[0) Page 2 Date 09-Feb-95

"FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S

Project Number: Project Name:

N/S

Project Location:

Test: Analysis Method:

Extraction Method:

RADAR STATION
TOTAL PETROLEUM HYDROCARBONS (418.1)
418.1 / EPA 600 / 04-79-020, Rev. March 1983
418.1 / EPA 600 / 04-79-020, Rev. March 1983

Matrix:

GROUNDWATER

QC Level:

Ι

002

03-FEB-95 1120

Lab Id: Client Sample Id: 8-WM Sample Date/Time: Received Date:

04-FEB-95

Batch: TPW032

Blank: A

Dry Weight %: N/A Extraction Date: Analysis Date:

08-FEB-95 09-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

TOTAL PETROLEUM HYDROCARBON

MG/L INITIALS ND MV 1

Comments:

ANALYST

{0) Page 3
Date 09-Feb-95

"FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S

Project Number: Project Name:

N/S

Project Location: Test:

RADAR STATION

Analysis Method:

TOTAL PETROLEUM HYDROCARBONS (418.1)

Extraction Method:

418.1 / EPA 600 / 04-79-020, Rev. March 1983 418.1 / EPA 600 / 04-79-020, Rev. March 1983

Matrix: QC Level: GROUNDWATER

Lab Id:

003

Sample Date/Time:

03-FEB-95 1300

Client Sample Id:

MW-9

Received Date:

04-FEB-95

Extraction Date: Analysis Date:

08~FEB-95 09-FEB-95

Batch: TPW032

Blank: A

Dry Weight %:

N/A

Parameter:

Units:

Results:

Rpt Lmts:

Q:

TOTAL PETROLEUM HYDROCARBON ANALYST

MG/L INITIALS ND MV 1

[0) Page 4 Date 09-Feb-95

#### "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

NAS, CO, PWC Client:

Project Number: Project Name: Project Location:

N/S N/S

RADAR STATION

Test:

Analysis Method: Extraction Method:

TOTAL PETROLEUM HYDROCARBONS (418.1) 418.1 / EPA 600 / 04-79-020, Rev. March 1983 418.1 / EPA 600 / 04-79-020, Rev. March 1983 GROUNDWATER

Matrix:

QC Level:

Lab Id:

004

Sample Date/Time:

03-FEB-95 1400

Client Sample Id:

MW-10

Received Date: Extraction Date:

04-FEB-95

Batch: TPW032

Blank: A

Dry Weight %: N/A

Analysis Date:

08-FEB-95 09-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

0:

TOTAL PETROLEUM HYDROCARBON

ANALYST

MG/L INITIALS ND MV 1

[0) Page 5 Date 09-Feb-95

## "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S

Project Number: Project Name:

N/S RADAR STATION

Project Location: Test:

TOTAL PETROLEUM HYDROCARBONS (418.1)

Analysis Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983 Extraction Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983

GROUNDWATER

Matrix: QC Level:

Lab Id:

Client Sample Id: MW-6

005

Sample Date/Time: Received Date:

03-FEB-95 1430 04-FEB-95

Batch: TPW032

Blank: A

Dry Weight %:

17

N/A

Extraction Date:

08-FEB-95

Analysis Date:

09-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

TOTAL PETROLEUM HYDROCARBON ANALYST

MG/L INITIALS

ND MV 1

11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

[0) Page 6 Date 09-Feb-95

# "FINAL REPORT FORMAT - SINGLE"

وموطأ أراء بمغارطين

Accession:

502216

Client:

NAS, CO, PWC N/S

Project Number: Project Name:

N/S

Project Location: Test:

Analysis Method:

RADAR STATION TOTAL PETROLEUM HYDROCARBONS (418.1)

Extraction Method:

418.1 / EPA 600 / 04-79-020, Rev. March 1983 418.1 / EPA 600 / 04-79-020, Rev. March 1983

Matrix: QC Level: GROUNDWATER

006

Lab Id:

Sample Date/Time:

03-FEB-95 1515

Client Sample Id:

MW-5

Received Date:

04-FEB-95

Batch: TPW032 Blank: A

Dry Weight %:

Extraction Date: Analysis Date:

08-FEB-95 09-FEB-95

Parameter:

Units:

N/A

Results:

Rpt Lmts:

Q:

TOTAL PETROLEUM HYDROCARBON

ANALYST

MG/L INITIALS ND MV 1

[0) Page 7 Date 09-Feb-95

人名英格兰森 使多种麻痹

## "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S N/S

Project Number: Project Name: Project Location:

RADAR STATION

Test:

TOTAL PETROLEUM HYDROCARBONS (418.1)
418.1 / EPA 600 / 04-79-020, Rev. March 1983
418.1 / EPA 600 / 04-79-020, Rev. March 1983
GROUNDWATER

Analysis Method: Extraction Method: Matrix:

QC Level:

Ι

007

Sample Date/Time: Received Date:

03-FEB-95 1530 04-FEB-95

Lab Id: Client Sample Id:

MW-2

Extraction Date:

08-FEB-95

Batch: TPW032

Blank: A

Dry Weight %:

N/A

Analysis Date:

09-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

TOTAL PETROLEUM HYDROCARBON ANALYST

MG/L INITIALS MV

. 1

[0) Page 8 Date 09-Feb-95

many of the gradient was

## "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

Project Number: Project Name: Project Location:

N/S N/S

RADAR STATION

Test: TOTAL PETROLEUM HYDROCARBONS (418.1)
Analysis Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983

Matrix: QC Level:

GROUNDWATER

Lab Id:

008

Sample Date/Time: Received Date:

03-FEB-95 1545

Client Sample Id:

MW-4

04-FEB-95

Batch: TPW032

Blank: A

Dry Weight %:

Extraction Date: Analysis Date:

08-FEB-95 09-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

TOTAL PETROLEUM HYDROCARBON ANALYST

MG/L INITIALS

ND MV 1

Q:

[0) Page 9 Date 09-Feb-95

## "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S

N/S

Project Number: Project Name: Project Location:

RADAR STATION

Tesť:

Analysis Method: Extraction Method:

TOTAL PETROLEUM HYDROCARBONS (418.1)
418.1 / EPA 600 / 04-79-020, Rev. March 1983
418.1 / EPA 600 / 04-79-020, Rev. March 1983

Matrix:

GROUNDWATER

QC Level:

Lab Id:

009

Sample Date/Time:

03-FEB-95 1600

Client Sample Id:

MW-3

Received Date:

04-FEB-95

Batch: TPW032 Blank: A

Dry Weight %:

N/A

Extraction Date: Analysis Date:

08-FEB-95 09-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

TOTAL PETROLEUM HYDROCARBON ANALYST

MG/L INITIALS ND MV

1

[0) Page 10 Date 09-Feb-95

# "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S

Project Number:
Project Name:
Project Location:
Test:

N/S

RADAR STATION

Analysis Method: Extraction Method:

Client Sample Id:

TOTAL PETROLEUM HYDROCARBONS (418.1)
418.1 / EPA 600 / 04-79-020, Rev. March 1983
418.1 / EPA 600 / 04-79-020, Rev. March 1983

Matrix: QC Level: GROUNDWATER

Lab Id:

010

Sample Date/Time: Received Date:

03-FEB-95 1620

MW-1

04-FEB-95

Batch: TPW032

Blank: A

Dry Weight %:

N/A

Extraction Date: Analysis Date:

08-FEB-95 09-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

Q:

TOTAL PETROLEUM HYDROCARBON

ANALYST

MG/L INITIALS MV

1

[0) Page 11 Date 09-Feb-95

#### "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

N/S

Project Number: Project Name: Project Location:

N/S

RADAR STATION

Test: TOTAL PETROLEUM HYDROCARBONS (418.1)
Analysis Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983

GROUNDWATER

Matrix: QC Level:

Client Sample Id:

011

Sample Date/Time: Received Date:

03-FEB-95 1620

Lab Id:

MW-1 (DUP)

04-FEB-95

Batch: TPW032

Blank: A

Dry Weight %:

N/A

Extraction Date: Analysis Date:

08-FEB-95 09-FEB-95

Parameter:

Units:

Results:

TOTAL PETROLEUM HYDROCARBON

ANALYST

Rpt Lmts:

1

MG/L INITIALS

MV

[0) Page 12 Date 09-Feb-95

# "FINAL REPORT FORMAT - SINGLE"

Accession:

502216

Client:

NAS, CO, PWC

Project Number: Project Name:

N/S N/S

Project Location:

RADAR STATION

Test:

Analysis Method: Extraction Method:

TOTAL PETROLEUM HYDROCARBONS (418.1) 418.1 / EPA 600 / 04-79-020, Rev. March 1983 418.1 / EPA 600 / 04-79-020, Rev. March 1983

Matrix: QC Level: GROUNDWATER

Lab Id:

012

Sample Date/Time:

03-FEB-95 1445

Client Sample Id:

EQUIPMENT BLANK

Received Date:

04-FEB-95

Batch: TPW032

Blank: A

Dry Weight %: N/A

Extraction Date: Analysis Date:

08-FEB-95 09-FEB-95

Parameter:

Units:

Results:

Rpt Lmts:

TOTAL PETROLEUM HYDROCARBON ANALYST

MG/L INITIALS ND MV 1

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-100:

[0] Page 13 Date 09-Feb-95

"Method Report Summary"

Accession Number: 502216

NAS, CO, PWC N/S N/S Client:

Project Number:

Project Number.
Project Name: N/S
Project Location: RADAR STATION
TOTAL PETROLEUM HYDROCARBONS (418.1)

Client Sample Id: Parameter: Unit: Result: TOTAL PETROLEUM HYDROCARBON, MW-1 MG/L 1 1 MW-1 (DUP) TOTAL PETROLEUM HYDROCARBON MG/L

#### Navy Public Works Center nvironmental Laboratory

.dg 3691, Code 920 NAS Pensacola, Fl. 32508 Phone (904) 452-4728 Autovon 922-4728 FAX (904) 452-2387/2799 Requester: NPWC Environmental

Address:

Bldg. 3691

NAS Pensacola, FI 32508

452-3180 Phone #: Contact: Greg Campbell Laboratory Report

The state of the s

601/602 Volatiles by Method 8260

Lab ID Number: 9503010 A Sample Date: 3 Feb 95

Received Date: 3 Feb 95

NASP Radar Facility Sample Site: Job Order #: 160 5001

FAX (904) 452-2387/2799		E0E00	Contac		Greg Campbell	`	<u>1</u>	E0E-74	300 01		100 5001	70	
Sample ID#		1- 50569	)		2- 50570	)		<sub>3-</sub> 50571	<u> </u>		4- 505	12	
Sample Name		Trip Blank			Equipment B	llank (Fie	ld)	MW-7			8-WM		
Collector Name		R. Hagendorf	er/R. Yav	vn	R. Hagendor	fer/R. Yav	wn	R. Hagendorf	er/R. Yav	wn	R. Hage	ndorfer/R. Yav	vn
Date/Time	Comp start												
Collected	Comp stop				05-105		4445	0.Fb. 0.F		4440			4400
(Military)	Grab	3 Feb 95 Grab	@_/	АМ	3 Feb 95 Grab	@	1445	3 Feb 95 Grab	@	1110	3 Feb 95 Grab	<u> </u>	1120
Sample Type	Comp/Grab	M, Chambers	/ L Moor	•	M. Chamber	s/I Moor	<u> </u>	M. Chambers	:/ I Moor			nbers/J. Moor	
Analyst  Date of Analysis		8 Feb 95	yu. 141001		8 Feb 95	3/0. 141001		8 Feb 95	370. IVIOOI		8 Feb 95		
Sample Matrix		DIWater			D I Water			Groundwater			Ground		
Dilution		Dilution	Х	1	Dilution	X	1	Dilution	X	1	Dilut		1
PARAMETER		. ID#	7	Det.	iD#		Det.	ID#		Det.	ID:		Det.
Volatiles by GCMS (Capillary)	METHOD #		units	Limit	·	0 units	Limit	3- <b>5057</b>		Limit		0572 units	Limit
Benzene	SW 8260	BDL	ug/l		BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromodichloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l		BDL	ug/l	
Bromolom	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromomethane	SW 8260	BDL	ug/i	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	
Carbon Tetrachloride	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/i	1
Chloroethane	SW 8260	BDL	ug/l	2		ug/l	2	BDL ·	ug/l	2	BDL	ug/l	2
2-Chloroethylvinyl ether	SW 8260	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Chloroform	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	
Chloromethane	SW 8260	BDL	υg/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Dibromochloromethane	SW 8260	BDL	ug/i	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
3-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
4-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Dichlorodifluoromethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	` ug/i	2
1,1-Dichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l		BDL	ug/l	1
1,2-Dichloroethane	SW 8260	BDL	ug/l	1	BDL	- ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1 - Dichloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/i	1
trans-1,2-Dichloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichloropropane	SW 8260	BDL	ug/l	1	BDL	ug/i	1	BDL	ug/l	1	BDL	ug/l	1
cis-1,3-Dichloropropene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
trans-1,3-Dichloropropene	SW 8260	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Ethylbenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Methylene chloride	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Methyl-tert-butyl Ether (MTBE)	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1,2,2-Tetrachloroethane	SW 8260	BDL	ug/l	1	-	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Tetrachloroethene	SW 8260	BDL	ug/l	1		ug/l	1	<del> </del>	ug/l	1	BDL	ug/l	1
Toluene	SW 8260	BDL	ug/l	1		ug/l	1	·	ug/l	1	BDL	ug/l	1
1,1,1 - Trichloroethane	SW 8260	BDL	ug/l	1		ug/l	1	·	ug/l	1	BDL	ug/l	1
1,1,2-Trichloroethane	SW 8260	BDL'	ug/l	1		ug/l	1	·	ug/l	1	1	ug/l	1
Trichloroethene	SW 8260	BDL	ug/i	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Trichlorofluoromethane	SW 8260	BDL	ug/l	1		ug/l	1	<b>+</b>	ug/l	1		ug/l	1
Vinyl Chloride	SW 8260	BDL	ug/l	1		ug/l	1	BDL	ug/l	1	<del></del>	ug/l	1
Xylenes (Total)	SW 8260	BDL	ug/l	1	-(	ug/l	2	BDL	ug/l	2	BDL	ug/l	
Surrogate Recoveries	Acceptance	Ī	<u></u>								T T		
Compound	Limits	1						<u> </u>					
1,2-Dichloroethane-d4	76-114	1	1	00		1	01		1	102			
Toluene-d8	88-110	·		98		·	97			97			
	1		97						96		1	95	
`romoflourobenzene	86-115	1	96		.1	98		<u> </u>	an .		,1,	93	

BDL=Below Detection Limit. Comments: ug/l=micrograms per liter. ug/kg=micrograms per klipgram.

Approved by:

aboratory Director

Date/Time: 06-Mar-95 @ 11:35

Report Generated End of Report

9701116

#### Navy Public Works Center

nvironmental Laboratory

idg 3691, Code 920 NAS Pensacola, Fl. 32508 Phone (904) 452-4728 Autovon 922-4728

FAX (904) 452-2387/2799

Requester: NPWC Environmental

Address:

Bldg. 3691 NAS Pensacola, FI 32508

Phone #: Contact:

452-3180 Greg Campbell Laboratory Report

601/602 Volatiles by Method 8260

Lab ID Number: 9503010 B Sample Date: 3 Feb 95

Received Date: 3 Feb 95 Sample Site: NASP Radar Facility

Job Order #: 160 5001

****					Greg Campbell		<del></del>	<del></del>			100 30		
Sample ID#		<sub>1-</sub> 50573	3		2- 5057	<b>'</b> 4		₃- 5057	5		4- 50	576	
Sample Name		MW-9			MW-10			MW-6			MW-5	5	
Collector Name		R. Hagendo	rler/R. Ya	wh	R. Hagend	orfer/R. Yav	wn	R. Hagendo	rfer/R. Yav	wn	R. Hag	jendorfer/R. Ya	wn
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	3 Feb 95	@	1300	3 Feb 95	@	1400	3 Feb 95	<u> </u>	1430	3 Feb	95 @	1515
Sample Type	Comp/Grab	Grab			Grab			Grab	<del></del>		Grab	<del></del>	
Analyst		M. Chamber	rs/J. Mooi	re	M. Chambe	ers/J. Moor	<u>e</u>	M. Chambe	rs/J. Moor	e		ambers/J. Moo	re
Date of Analysis Sample Matrix		8 Feb 95 Groundwate			8 Feb 95 Groundwat			8 Feb 95 Groundwate			8 Feb		
Dilution		Dilution	X	1	Dilution			Dilution	X			dwater ution X	
PARAMETER		ID#	<del></del>	Det.	ID#	<u>'                                    </u>	Det.	ID#	^	Det.		D#   .	Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 5057	3 units	Limit	2- 505	74 units	Limit	3- 505	75 units	Limit	4	50576 units	Limit
Benzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1		2 ug/l	1
Bromodichloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromoform	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromomethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	_2
Carbon Tetrachloride	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chloroethane	SW 8260	BDL	ug/l	2	BDL	ug/i	2	BDL .	ug/l	2	BDL	ug/l	2
2-Chloroethylvinyl ether	SW 8260	BDL	ug/l	3	BDL	ug/i	3	BDL	ug/l	3	BDL	ug/l	3
Chloroform	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chloromethane	SW 8260	BDL	ug/l	1		ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Dibromochloromethane	SW 8260	BDL	ug/l	1	- <del> </del>	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichlorobenzene	SW 8260	BDL	ug/l	1		ug/l	1	BDL	ug/l	1	BDL	ug/l	<u> </u>
3-Dichlorobenzene	SW 8260	BDL	ug/l	1		ug/l	1	BDL	ug/l	1	BDL	ug/l	<del>                                     </del>
4-Dichlorobenzene	SW 8260	BDL	ug/l	1		ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Dichlorodifluoromethane	SW 8260	BDL	ug/l	2	· <del> </del>	ug/l	2	BDL	ug/l	2	BDL	` ug/l	2
1,1-Dichloroethane	SW 8260	BDL	ug/l	1		ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichloroethane	SW 8260	BDL	ug/i	1	·	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1-Dichloroethene	SW 8260	BDL	ug/l	<del>  i</del>		ug/l	1	BDL	ug/l	1	BDL		<del>                                     </del>
trans-1,2-Dichloroethene	SW 8260	BDL	ug/l	1		ug/l	<u> </u>	BDL	ug/l	1	BDL	ug/l	
1,2-Dichloropropane	SW 8260	BDL	ug/l	<del>  </del>		ug/l	1	BDL	ug/l	1	BDL	ug/l	1
cis-1,3-Dichloropropene	SW 8260	BDL	ug/l	1	<del></del>		1	<del> </del>		1	BDL	ug/l	
	SW 8260	BDL		4		ug/l	4	<del></del>	ug/l	4	BDL	ug/l	<del>                                     </del>
trans-1,3-Dichloropropene		BDL	ug/l	1		ug/i			ug/l	1	·	ug/l	-
Ethylbenzene Mathylana ablasida	SW 8260	BDL	ug/l	1	-	ug/l	1	· <del> </del>	ug/l	<del> </del>	ļ	3 ug/l	<del>                                     </del>
Methylene chloride	SW 8260	1	ug/l		·	ug/l	1	1	ug/l	1 1	BDL	ug/l	
Methyl-tert-butyl Ether (MTBE)	SW 8260	BDL	ug/l	1		ug/l	1	1	ug/l	1	BDL	ug/l	<del>                                     </del>
1,1,2,2-Tetrachloroethane	SW 8260	BDL	ug/l	1 1		ug/l	1	· <del> </del>	ug/l	1 1	BDL		
Tetrachloroethene	SW 8260	BDL	ug/l	11		ug/l	1		ug/l	1	BDL	ug/l	1 - 1
Toluene	SW 8260	BDL	ug/l	1		ug/l	1	1	ug/l	1	<del></del>	1 ug/l	1 1
1,1,1 - Trichloroethane	SW 8260	BDL	ug/l	1		ug/l	1	<del></del>	ug/l	1 1	BDL		<del>  _ 1</del>
1,1,2-Trichloroethane	SW 8260	BDL'	ug/l	1 1	-	ug/l	1	- <del> </del>	ug/l	1	BDL		1
Trichloroethene	SW 8260	BDL	ug/l	1 1		ug/l	1	· <del> </del>	ug/l	1	<del> </del>	<del></del>	1
Trichlorofluoromethane	SW 8260	BDL	ug/l	1 1		ug/l	1		ug/l	1 1	BDL		1 1
Vinyl Chloride	SW 8260	BDL	ug/l	<u> </u>		ug/i	1 1	1	ug/l	1	1	<del></del>	1 1
Xylenes (Total)	SW 8260	BDL	ug/l	2	2 BDL	ug/l	2	BDL	ug/l	2	<u></u>	<b>4</b> ug/l	2
Surrogate Recoveries	Acceptance												
Compound	Limits				<u> </u>						L		
1,2-Dichloroethane-d4	76-114	1		101			100	-1		100			
Toluene-d8	88-110	1	98			97		1	98			98	
romoflourobenzene	86-115		96			96			96		<u> </u>	96	
G HONOULODE ZELIE	1 00 - 110	1				30		1	JU		1	80	

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kij/gram. BD =Below Detection Limit.

Approved by:

boratory Director

Date/Time: 06-Mar-95 @ 11:40

Report Generated

**End of Report** 

### Navy Public Works Center nvironmental Laboratory

ال 3691, Code 920 NAS Pensacola, FI. 32508 Phone (904) 452-4728 Autovon 922-4728 FAX (904) 452-2387/2799

Requester: NPWC Environmental

Bldg. 3691 Address:

NAS Pensacola, FI 32508

Phone #: Contact:

452-3180 Greg Campbell Laboratory Report

601/602 Volatiles by Method 8260

Lab ID Number: 9503010 C Sample Date: 3 Feb 95 Received Date: 3 Feb 95

Sample Site: NASP Radar Facility

Job Order #: 160 5001

FAX (904) 452-2387/2799			Conta	U.,	Greg Campbi					rder #:	160 500		
Sample ID#		1- 5057	7		2- 505	78		3- 50579	9		4- 50	580	
Sample Name		MW-2			MW-4			MW-3			MW-1		
Collector Name		R. Hagendo	rfer/R. Ya	wn	R. Hagen	dorfer/R. Yav	wn	R. Hagendo	fer/R. Ya	wn	R. Hage	endorfer/R. Ya	Wn
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	3 Feb 95	<u>@</u>	1530	3 Feb 95	@	1545	3 Feb 95	@_	1600	3 Feb 9	ı <u>s</u> @	1620
Sample Type	Comp/Grab	Grab			Grab			Grab	-/1 1/1		Grab		
Analyst Date of Analysis		M. Chambe 8 Feb 95	rs/J. Mooi	re	8 Feb 95	bers/J. Moor	e	M. Chamber 8 Feb 95	S/J. MOO	re	8 Feb 9	mbers/J. Moo	re
Sample Matrix		Groundwate	er		Groundw	ater		Groundwate	<u></u>		Ground		
Dilution		Dilution	X	1	Dilutio		1	Dilution	×	1		tion X	1
PARAMETER		IO#		Det.	ID#		Det.	ID#		Det.	ΙĊ	)# ·	Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 5057		Limit		578 units		3- <b>505</b> 7	9 units	Limit	4-	0580 units	Limit
Benzene	SW 8260		<b>6</b> ug/l	1	BDL	ug/l	1		1 ug/l	11	ļ	<b>26</b> ug/l	1
Bromodichloromethane	SW 8260	BDL	,ug/l	1 1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromoform	. SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromomethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Carbon Tetrachloride	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l		BDL	ug/l	1
Chlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chloroethane	SW 8260	BDL	ug/l	2		ug/l	2	BDL	ug/l	2	BDL	ug/l	2
2-Chloroethylvinyl ether	SW 8260	BDL	ug/I	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Chloroform	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	.ug/i	1	BDL	ug/l	1
Dibromochloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL .	ug/l	1	BDL	ug/l	1
1,2-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/i	1	BDL	ug/l	1
3-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,4-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL '	ug/l	1	BDL	ug/l	1
Dichlorodifluoromethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	` ug/l	2
1,1-Dichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/t	1	BDL	ug/l	1
1,2-Dichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1-Dichloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
trans-1,2-Dichloroethene	SW 8260 ×	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichloropropane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
cis-1,3-Dichloropropene	SW 8260	BDL	ug/l	1	BDL	· ug/l	1	BDL	ug/l	1	BDL	ug/l	1
trans-1,3-Dichloropropene	SW 8260	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Ethylbenzene	SW 8260		6 ug/l	1	<del> </del>	1 ug/i	1		3 ug/l	1		55 ug/l	1
Methylene chloride	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/i	1	BDL	ug/l	1
Methyl-tert-butyl Ether (MTBE)	SW 8260	BDL	ug/l	1	1	ug/i	1	BDL	ug/l	1	BDL	ug/l	<u> </u>
1,1,2,2-Tetrachloroethane	SW 8260	BDL	ug/l	1		ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Tetrachloroethene	SW 8260	BDL	ug/l	1	·	ug/l	1	BDL	ug/l	<del>  -  </del>	BDL	ug/l	1
Toluene	SW 8260	555	5 ug/l	1		ug/i ug/i	1		2 ug/i	1	552	22 ug/l	1
1,1,1 - Trichloroethane	SW 8260	BDL		1			1	BDL		<u>'</u>	BDL		-
		BDL	ug/l	1		ug/l	1	<del> </del>	ug/l	1		ug/l	1
1,1,2-Trichloroethane Trichloroethené	SW 8260	BDL	ug/l	+	<del></del>	ug/l	<del> </del>		ug/l	+	<del></del>	ug/l	<del> </del>
	SW 8260 SW 8260	BDL	ug/l	1		ug/l	1	BDL BDL	ug/l	1 1	1	ug/l	1 1
Trichlorofluoromethane	SW 8260	BDL	ug/l	1		ug/l	1	BDL	ug/l	<del>                                     </del>	· · · · · ·	ug/l	-
Vinyl Chloride	<del> </del>		ug/l	2	- <del> </del>	ug/l	2	·	ug/l 25 ug/l	2		ug/l	2
Xylenes (Total)	SW 8260		<b>36</b> ug/l	1	- I	9 ug/l			- Jug/i	1 2	1	280 ug/l	2
Surrogate Recoveries  Compound	Acceptance Limits												
1,2-Dichloroethane-d4	76-114	i .	101		· · · · · · · · · · · · · · · · · · ·	100		1	01		Ť	102	
	<del> </del>									<b> </b>			
Toluene-d8	88-110		98			97			98		·	97	
romoflourobenzene	86~115	1	97		<u> </u>	95			97			97	

Comments: ug/t=micrograms per liter. ug/kg=micrograms per kt/ogram. BDL=

Approved by:

Jerry Dees ratory Director

Date/Time: 06-Mar-95 @ 11:46

Report Generated

End of Report

#### **Navy Public Works Center**

#### nvironmental Laboratory

ldg 3691, Code 920د NAS Pensacola, Fl. 32508 Phone (904) 452-4728 Autovon 922-4728

Requester: NPWC Environmental

Address: Bldg. 3691

NAS Pensacola, FI 32508

Phone #: Contact:

452-3180 Greg Campbell Laboratory Report

601/602 Volatiles by Method 8260

Lab ID Number: 9503010 D Sample Date: 3 Feb 95 Received Date: 3 Feb 95

Sample Site: NASP Radar Facility
Job Order #: 160 5001

Autovon 922-4728 FAX (904) 452-2387/2799			Phone :		452-3180 Greg Campbell				sample lob Or		NASP Hadar Facility 160 5001	
1700 (304) 402 2007/2733	1		COMME		Greg Garippen		— т		OD 011	1	(00 000)	
Sample ID#		<sub>1-</sub> 50581			2-			3-			4-	
Sample Name		MW-1 Duplice	ate									
Collector Name		R. Hagendorfe	r/R. Yaw	n								
Date/Time	Comp start											
Collected	Comp stop				,							
(Military)	Grab	3 Feb 95	_@	1620								
Sample Type	Comp/Grab	Grab										
Analyst Date of Analysis		M. Chambers/	J. Moore	<del></del>							y	
Date of Analysis Sample Matrix		8 Feb 95 Groundwater										
Dilution		Dilution	X	1	Dilution	X	-,1	Dilution	х		Dilution X	
PARAMETER		ID#	<del>T Î T</del>	Det.	ID# I		Det.	ID#	$\hat{}$	Det.	ID# I:	Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 50581	units	Limit	2- u	nits   l	Limit	3-	units	Limit	4- units	Limit
Benzene	SW 8260	23	ug/l	1	ug	//	1		ug/l	1	ug/l	1
Bromodichloromethane	SW 8260	BDL	ug/l	1	ug	<b>1/</b> L	1		ug/l	1	ug/l	1
Bromoform	SW 8260	BDL	ug/l	1	ug		1		ug/l	1	ug/l	1
Bromomethane	SW 8260	BDL	ug/l	2	ug		2		ug/l	2	ug/l	2
Carbon Tetrachloride	SW 8260	BDL	ug/l	1	uç	_	1		ug/l	1	ug/l	1
Chlorobenzene	SW 8260	BDL	ug/l	<u>-</u>	uç		1		ug/l	1	ug/l	1
Chloroethane	SW 8260	BDL	ug/l	2	uç		2		ug/l	2	ug/l	2
	SW 8260	BDL	ug/l	3			3		ug/l	3		3
2-Chloroethylvinyl ether	SW 8260	BDL		1	ug		1			1	ug/l	1
Chloroform			ug/l		uç				ug/l		ug/l	
Chloromethane	SW 8260	BDL	ug/l		uç		1		ug/l	1	ug/l	├-:
Dibromochloromethane	SW 8260	BDL	ug/l	1	uç				ug/l	1	ug/l	
',2-Dichlorobenzene	SW 8260	BDL	ug/l	1		3/1	1		ug/l	1	ug/l	11
3-Dichlorobenzene	SW 8260	BDL	ug/l	1	UÇ	g/I	1		ug/l	1	ug/l	1 1
4,4~Dichlorobenzene	SW 8260	BDL	ug/i	1	uç	3/1	1		ug/l	1	ug/l	1
Dichlorodifluoromethane	SW 8260	BDL	ug/l	2	uç	3/1	2		ug/l	2	` ug/l	2
1,1-Dichloroethane	SW 8260	BDL	ug/l	1	ug	2/1	1		ug/l	1	ug/l	1
1,2-Dichloroethane	SW 8260	BDL	ug/l	1	uç	2/1	1		ug/l	1	ug/l	1
1,1-Dichloroethene	SW 8260	BDL	ug/l	1	uç	3/1	1		ug/I	1	ug/l	1 1
trans-1,2-Dichloroethene	SW 8260	BDL	ug/l	1	uç	9/1	1		ug/l	1	ug/l	1
1,2-Dichloropropane	SW 8260	BDL	ug/l	1	uç	g/I	1		ug/l	1	ug/l	1
cis-1,3-Dichloropropene	SW 8260	BDL	ug/l	1	· u	3/1	1		ug/l	1	ug/l	1
trans-1,3-Dichloropropene	SW 8260	BDL	ug/l	4		9/1	4		ug/l	4	ug/l	4
Ethylbenzene	SW 8260	<del> </del>	2 ug/l	1	<del></del>	9/1	1		ug/l	1	ug/l	1
Methylene chloride	SW 8260	BDL	ug/l	1	<del> </del>	g/I	1		ug/l	<u></u>	ug/l	1
Methyl-tert-butyl Ether (MTBE)	SW 8260	BDL	ug/l	<u>-</u>	<u>-</u>	g/l	1		ug/l	1	ug/l	1
1,1,2,2-Tetrachloroethane	SW 8260	BDL	ug/l	<u>:</u>	· · · · · · · · · · · · · · · · · · ·	g/I	1		ug/l	1	ug/l	<del>                                     </del>
· · · · · · · · · · · · · · · · · · ·	SW 8260	BDL		!	-t		<u>-</u>		ug/i ug/i	1		<u>'</u>
Tetrachloroethene	<del> </del>	1	ug/l	1		g/l	1			1	ug/l	<u>-</u>
Toluene	SW 8260		lug/l			g/l			ug/l		ug/i	
1,1,1-Trichloroethane	SW 8260	BDL	ug/l	1		g/l			ug/l	1	ug/l	1 - 1
1,1,2-Trichloroethane	SW 8260	BDL	ug/l	1		g/l	1		ug/l	1		1
Trichloroethené	SW 8260	BDL	ug/l	1		g/l			ug/l		ug/l	1 1
Trichlorofluoromethane	SW 8260	BDL	ug/l			g/l	1		ug/l	1	ug/l	1 1
Vinyl Chloride	SW 8260	BDL	ug/l			g/l	1		ug/l	1	1	1
Xylenes (Total)	SW 8260	300	0 ug/l	4	l u	g/I	2	<u> </u> ====================================	ug/l	2	l ug/l	2
Surrogate Recoveries	Acceptance	ì										
Compound	Limits				<u> </u>							
1,2-Dichloroethane-d4	76-114	100	0	J. C. B. W.	T							
Toluene-d8	88-110	9			1							

Comments: ug/l=micrograms per liter. ug/kg=micrograms per ktlogram. BDL=Be/ow Delection Limit. Date/Time: 06-Mar-95 @ 11:30 Approved by: Jerry Dees, Labor tory Director Report Generated **End of Report** 

### Navy Public Works Center nvironmental Laboratory

dg. 3691, Code 920

NAS Pensacola, Fl. 32508-6500

Phone (904) 452-4728 Autovon 922-4728

Requester: NPWC Environmental

Address: Bldg. 3691

NAS Pensacola, FI 32508

Phone #: 452~3180 Contact: Greg Campbell Laboratory Report

PAH's by Method 8270A

Lab ID Number: 9502010 E

Sample Date: 3 Feb 95

Received Date: 3 Feb 95

Sample Site: NASP Radar Facility

Job Order #: 160 5001

Sample ID#	Lab	1- 50570	)		2- 50571			₃- 50572			4- 50573		
Sample Name	Requester	Equipment B	ank (Fie	ld)	MW-7			MW-8			MW-9		
Collector Name		R. Hagendorl	er/R. Yav	wn	R. Hagendorfe	r/R. Yav	<b>v</b> n	R. Hagendorfe	r/R. Yav	wn	R. Hagendorfe	r/R. Yav	vn
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	3 Feb 95	@_	1445	3 Feb 95	@	1110	3 Feb 95	@	1120	3 Feb 95	<u>@</u>	1300
Sample Type	Comp/Grab	Grab			Grab			Grab			Grab		
Analyst		J. W. Moore			J. W. Moore			J. W. Moore			J. W. Moore		
Date of Analysis		5 Feb 95			5 Feb 95			6 Feb 95			6 Feb 95		
Sample Matrix		DI Water			Groundwater			Groundwater			Groundwater		
Dilution		Dilution	Х	1	Dilution	X	1	Dilution	Х	1	Dilution	Х	1
PARAMETER		ID#	1	Det.	ID#		Det.	ID#		Det.	ID#		Det.
Polynuclear Aromatics (PAH's)	METHOD #	1- 5057	units	Limit	2- 50571	units	Limit	3- 50572	units	Limit	4- 50573	units	Limit
Acenaphthene	EPA 8270A	BDL	ug/l	5	BDL .	ug/l	5	BDL	ug/l	5	BDL	ug/l	• 5
Acenaphthylene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Anthracene	EPA 8270A	BDL	ug/i	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(a)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(a)pyrene	EPA 8270A	BDL	ug/l	2	BDL	ug/I	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(b)fluoranthene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Benzo(g,h,i)perylene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(k)fluoranthene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
hrysene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/i	3	BDL	ug/l	3
Jibenzo(a,h)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL ·	ug/l	3
Fluoranthene `	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l_	2
Fluorene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Indeno(1,2,3-cd)pyrene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Naphthalene	EPA 8270A	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/I	7	BDL	ug/l	7
Phenanthrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Pyrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
1 - Methylnaphthalene	EPA 8270A	BDL	ug/l		BDL	ug/l	5	BDL	ug/i	5	BDL	ug/l	5
2-Methylnaphthalene	EPA 8270A	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7
SURROGATE RECOVERIES	Acceptance												

SURROGATE RECOVERIES	Acceptance				
Compound	Limits				
Nitrobenzene-d5	35-114	90	82	, 76	
2-Fluorobiphenyl	43-116	91	82	77	
Terphenyl-d14	33141	¥ 93	85	85	

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kijogram. BDL=Below Detection Limit.

Approved by:

ory Director

Date/Time: 06-Mar-95 @ 12:17

Report Generated

**End of Report** 

### Navy Public Works Center invironmental Laboratory

idg. 3691, Code 920

NAS Pensacola, Fl. 32508-6500

Phone (904) 452-4728

Autovon 922-4728

Requester.

Address:

Phone #:

Contact:

NAS Pensacola, FI 32508

452-3180

Bldg. 3691

NPWC Environmental

Greg Campbell

Laboratory Report

PAH's by Method 8270A

Lab ID Number: 9502010 F

Sample Date:

Received Date: 3 Feb 95

Sample Site: NASP Radar Facility

Job Order #: 160 5001

Sample ID#	Lab	1- 50574			2- 50575			<sub>3-</sub> 50576			<sub>4-</sub> 5057	77	
Sample Name	Requester	MW-10			MW-6			MW-5			MW-2		
Collector Name		R. Hagendorf	er/R. Yav	٧n	R. Hagendorfe	r/R. Yav	wn	R. Hagendorfe	r/R. Yav	vn	R. Hagend	dorfer/R. Yav	vn
Date/Time	Comp start										:		
Collected	Comp stop												
(Military)	Grab	3 Feb 95	@	1400	3 Feb 95	@	1430	3 Feb 95	@	1515	3 Feb 95	₽_	1530
Sample Type	Comp/Grab	Grab			Grab			Grab			Grab		
Analyst		J. W. Moore			J. W. Moore			J. W. Moore			J. W. Moo	ore	
Date of Analysis		6 Feb 95			6 Feb 95			6 Feb 95			5 Feb 95	•	
Sample Matrix		Groundwater			Groundwater			Groundwater			Groundwa	ater	
Dilution		Dilution	Х.	1	Dilution	X	1	Dilution	Х	1	Dilutio	n X	1
PARAMETER		. ID#	Ì	Det.	ID#	1	Det.	ID#		Det.	ID#		Det.
Polynuclear Aromatics (PAH's)	METHOD #	1- 50574	units	Limit	2- 50575	units	Limit	3- 50576	units	Limit	4- 50	577 units	Limit
Acenaphthene	EPA 8270A	BDL	ug/l	5	BDL '	ug/l	5	BDL	ug/l	5	BDL	ug/l	
Acenaphthylene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Anthracene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(a)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(a)pyrene	EPA 8270A	BDL	ug/l	2	· BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(b)fluoranthene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Benzo(g,h,i)perylene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(k)fluoranthene	EPA 8270A	BDL	ug/i	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
hrysene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Dibenzo(a,h)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	` ug/l	3
Fluoranthene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Fluorene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Indeno(1,2,3-cd)pyrene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Naphthalene	EPA 8270A	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7		10 ug/l	7
Phenanthrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Pyrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
1-Methylnaphthalene	EPA 8270A	BDL	ug/l		BDL	ug/l	5	BDL	ug/l	5		10 ug/l	5
2-Methylnaphthalene	EPA 8270A	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7		10 ug/l	7
SURROGATE RECOVERIES	Acceptance												

SURROGATE RECOVERIES	Acceptance				
Compound	Limits				
Nitrobenzene-d5	35-114	80	84	. 63	84
2-Fluorobiphenyl	43116	77	82	67	83
Terphenyl-d14	33-141	1/ B4	88	78	86

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.

Approved by:

oratory Director

Date/Time: 06-Mar-95 @ 12:20

Report Generated

End of Report

### Navy Public Works Center Friedrich Transfer Friedri

dg. 3691, Code 920

Tables of the same

NAS Pensacola, Fl. 32508-6500

Phone (904) 452-4728 Autovon 922-4728

Requester:

NPWC Environmental

Address:

Bldg. 3691 NAS Pensacola, FI 32508

Phone #: 452-3180

Contact: Greg Campbell Laboratory Report

PAH's by Method 8270A

Lab ID Number: 9502010 G

Sample Date: 3 Feb 95

Received Date: 3 Feb 95

NASP Radar Facility Sample Site: Job Order #: 160 5001

•			Contac		Greg Campbell					qer#:	160 5001		
Sample ID#	Lab	1- 5057	8		2- 50579	9		3- 5058	80		4- 5058	1	
Sample Name	Requester	MW-4			MW-3			MW-1			MW-1 Du	olicate	
Collector Name		R. Hagend	orfer/R. Yav	wn	R. Hagendo	fer/R. Yav	wn	R. Hagen	dorfer/R. Yav	vn	R. Hagend	orfer/R. Ya	wn
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	3 Feb 95	@	1545	3 Feb 95	@	1600	3 Feb 95	@_	1620	3 Feb 95		1620
Sample Type	Comp/Grab	Grab			Grab			Grab	-		Grab		
Analyst		J. W. Moor	e	_	J. W. Moore			J. W. Mod	хе		J. W. Moor	е	
Date of Analysis		5 Feb 95			5 Feb 95			5 Feb 95			5 Feb 95		
Sample Matrix		Groundwat	er		Groundwate	r		Groundw	ater		Groundwa	ter	
Dilution		Dilution	<u> </u>	1	Dilution	X	1	Dilutio	on X	1	Dilution	1 X	1
PARAMETER		ID#	1	Det.	1D#	1	Det.	ID#		Det.	ID#		Det.
Polynuclear Aromatics (PAH's)	METHOD #	1- 505	78 units	Limit	2- 5057	9 units	Limit	3- 50	580 units	Limit	4- 505	81 units	Limit
Acenaphthene	EPA 8270A	BDL	ug/l	5	BDL .	ug/l	5		<b>8</b> ug/l	5		7 ug/l	
Acenaphthylene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Anthracene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(a)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(a)pyrene	EPA 8270A	BDL	ug/l	2	· BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(b) fluoranthene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Benzo(g,h,i)perylene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(k)fluoranthene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
hrysene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Jibenzo(a,h)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l_	3	BDL	ug/l	3	BDL	· ug/l	3
Fluoranthene '	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Fluorene	EPA 8270A	BDL	ug/l	4		1 * ug/l	4		10 ug/l	4		10 ug/l	4
Indeno(1,2,3-cd)pyrene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Naphthalene	EPA 8270Ā		1 * ug/l	7		4 * ug/l	7		63 ug/l	7		57 ug/l	7
Phenanthrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3		12 ug/l	3		11 ug/l	3
Pyrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3		2* ug/l	3		2* ug/i	3
1-Methylnaphthalene	EPA 8270A		2* ug/l	5		4* ug/l	5		80 ug/l	5		75 ug/l	5
2-Methylnaphthalene	EPA 8270A		1 tug/l	7		<b>5*</b> ug/l	7	<u></u>	113 ug/l	7	<u></u>	05 ug/l	7
SURROGATE RECOVERIES	Acceptance	I											
Compound	Limits												
Nitrobenzene-d5	35-114		71		1	82			76			72	

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.

80

83

\* -- Compound detected, but below method Detection Limits

Approved by:

72

85

17

80

80

Director

Date/Time: 06-Mar-95 @ 12:27

71

70

Report Generated

End of Report

43-116

33-141

PWC 5090/14

2-Fluorobiphenyl

Terphenyl-d14

## Navy Pub... Works Center Environmental Laboratory

Bldg.3297, Code 920

NAS Pensacola, Fl. 32508-6500

Phone 904-452-3642/4758

Autovon 922-3642

Requester:

**NPWC Environmental** 

Address:

Phone #:

Contact

Bldg. 3691

NAS Pensacoia, FI 32508

452-3180

Greg Campbell

Laboratory Report

Lead in Water by Method 239.2

Lab ID Number: 9503010 H

Sample Date: 3 Feb 95

Received Date:

3 Feb 95

Sample Site:

NASP Radar Facility

Job Order #:

160 5001

Sample ID#	Lab	1-	50	570			2-	50571			3-	50572			4-	50573			Analyst(s):
Sample Name	Requester		Equipm	ent Blan	k (Field	i)	M	W-7			N	1W-8			М	W-9			Brian Nelson
Collector Name			R. Hage	endorfer/	R. Yaw	n	R.	Hagendorfer	/R. Yav	m	P	R. Hagendorfer/	R. Yaw	'n	R.	Hagendorfer	/R. Yaw	m	
Date/Time	Comp start								À										]
Collected	Comp stop																		Date(s) of analysis
(Military)	Grab		3 Feb 9	5	∴.@	1445	3 1	Feb 95	@	1110	3	Feb 95	@	1120	3	Feb 95	@	1300	10 Feb 95
Sample Type	Comp/Grab		Grab				Gr	ab			G	irab			G	ab			]
Sample Matrix			D   Wate	er			Gr	oundwater			G	roundwater			G	oundwater			1
PARAMETER			ID#			Det.	ID	#		Det.	I	)#		Det.	ID	#		Det.	
Metals:	METHOD #	1-		50570	units	Limit	2-	50571	units	Limit	3-	50572	units	Limit	4-	50573	units	Limit	Preservative(s)
Lead(Pb)	EPA 239.2	х	BDI		mg/l	0.003	x	0.013	mg/l	0.003	x	0.026	mg/l	0.003	x	0.051	mg/l	0.003	HNO <sub>3</sub> to pH<2

Sample ID#	Lab	5- 505	74		6- 50	0575		7-	50576			8-	50577			Analyst(s):
Sample Name	Requester	MW-10			MW-	6		M	W-5			MV	V-2			Brian Nelson
Collector Name		R. Hagen	dorfer/R. Ya	ıwn	R. Ha	gendorfer/R. Ya	٧n	R	. Hagendorfer/	R. Yaw	n	R.	Hagendorfer/	R. Yaw	'n	
Date/Time	Comp start															
Collected	Comp stop															Date(s) of analysis:
(Military)	Grab	3 Feb 95	@	1400	3 Feb	95 @	1430	3	Feb 95	@	1515	3 F	eb 95	@	1530	10 Feb 95
Sample Type	Comp/Grab	Grab			Grab			G	rab			Gra	ab			
Sample Matrix		Groundw	ater		Grour	ndwater		G	roundwater			Gro	oundwater			
PARAMETER		ID#		Det.	ID#	.	Det.	10	#		Det.	ID#	¥		Det.	
Metals:	METHOD #	5- 5	0574 units	Limit	6-	50575 units	Limit	7-	50576	units	Limit	8	50577	units	Limit	Preservative(s)
Lead(Pb)	EPA 239.2	x 0.0	)51 mg	/ 0.003	x BC	)L mg/	0.003	х	0.012	mg/l	0.003	x	0.005	mg/l	0.003	HNO <sub>3</sub> to pH<2

Comments: mg/l=milligrams per liter. BDL=Below Detection Limit.

Approved by:

Date/Time: 06-Mar-95

12:40

Jerry Dees, Laboratory Director

**End of Report** 

## Navy Public Works Center Environmental Laboratory

Bidg.3297, Code 920

NAS Pensacoia, Fl. 32508-6500

Phone 904-452-3642/4758

Autovon 922-3642

Requester:

Address:

Phone #:

Contact

**NPWC Environmental** 

Bldg. 3691 ·

NAS Pensácola, FI 32508

452-3180

Greg Campbell

Laboratory Report

Lead in Water by Method 239.2

Lab ID Number: 9503010 !

Sample Date: 3 Feb 95

Received Date:

3 Feb 95

Sample Site:

۶.

NASP Radar Facility

Job Order #: 160 5001

Sample ID#	Lab	1-	50578			2-	50579			3-	50580			4	50581			Analyst(s):
Sample Name	Requester	М	W-4			MV	V-3			M'	<b>V−1</b>			M	N−1 Duplicat	9		Brian Nelson
Collector Name		R	. Hagendorfer	/R. Yaw	'n	R. 1	Hagendorfer/	R. Yaw	'n.	R.	Hagendorfer/	R. Yaw	'n	R.	Hagendorfer/	R. Yaw	'n	
Date/Time	Comp start							4										
Collected	Comp stop																	Date(s) of analysis:
(Military)	Grab	3	Feb 95	∴ @	1545	3 F	eb 95	@_	1600	31	Feb 95	@	1620	31	Feb 95	@	1620	10 Feb 95
Sample Type	Comp/Grab	G	rab			Gra	ab			Gr	ab			Gr	ab			]
Sample Matrix		G	roundwater			Gro	oundwater			Gr	oundwater			Gr	oundwater			
PARAMETER		ID	)#		Det.	ID#	<b>#</b>		Det.	ID	#		Det.	D	#		Det	
Metals:	METHOD #	1-	50578	units	Limit	2-	50579	units	Limit	3-	50580	units	Limit	4-	50581	units	Limit	Preservative(s)
Lead(Pb)	EPA 239.2	x	0.008	mg/l	0.003	x	0.008	mg/l	0.003	x	0.011	mg/l	0.003	x	0.015	mg/l	0.003	HNO <sub>3</sub> to pH<2

Comments: mg/l=milligrams per liter. BDL=Below Detection Limit.

Approved by:

Laboratory Director

Date/Time:

06-Mar-95

**End of Report** 



#### RH 95-154 Pg 1 of 2 CHAIN OF CUSTODY

	PART 1 Bottle Ship	pment Information							ATI ACCESSION #:																					
	CLIENT: NAS										CL	IEN	T P	ROJ	EC1	T NUMBER:														
	TV II	PRESERVATIVE PLASTIC									ric (	CON	NEF	GLASS CONTAINERS								Г								
	QUANTITY OF SAMPLE CONTAINERS				tate		Served					ç	c	oak	Cup.	( <del>V</del> )	æ	(C)	fial	E	E	Ę	wm	p Blank				NOT		
	SHIPPED		HNO3	걸	Zn Acetate	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Unpreserved	NaOH	8 oz.	16 oz.	32 oz.	½ gallon	1 gallon	Whirt-pak	100-ML Cup	120 ml (A)	1 liter (A)	1 liter (C)	40 ml Vial 4 oz. wm	4 0Z W	8 oz. wm	16 oz. wm	32 oz. wm	D.I. Trip Blank				TON		
set.	- 20		_	7	_	-	+			_	_	_	_	H		Н			$\checkmark$				_	$\vdash$				,		-
, ,	10	-	-	7		<del>   </del> ,	7	一	-	_	_			$\vdash$	_		\ \	$\vdash$	_		-		-	$\vdash$	┢					
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	10	_	4	1_		<del>     </del>	4	_	V											با		_		_	<del> </del>					
_	Reinquished By:		<u>.</u> 0	•	-^	lL	1	Time	2	L )	Dat	<u>.                                    </u>	<u> </u>	Re	ceive	ed By	ا ا:	hsh	h				e	L	1		Time	83		Date 2-3-1
(		Arthura Catalina 1820 2-					~ .						PARAMET				ERS AND PRE			SERVATI										
	SAMPLE MATRIX CO								DDES								٦	Ī	П	T	$\neg$	T							T	
	DW DRINKING WATER WW WASTEWATER GW GROUNDWATER	S	AI AIR SO SOIL OI OIL					SL SI			SURFACE WATER SLUDGE STORMWATER		3	2109	4	8												TOTAL # OF BOTTLES		
	SAMPLE I.D.			SAN	IPLI	E DATI	T	SAN	APLE	TIN	AE	. 1	TAN	RIX	_	9	7	ما		Į				ļ						BOTTLES
∠o\	MW-7			2	-3	45	T	1	11	b	7	G	ـ لـ	د		/	1	1												5
Z0S	12 nw-8				7				12				1			_	1	1						_						5
505 505 50	Mw-9				1	·.	1		130				4			4	1	1	4	_	_	4	_			_		_	$\dashv$	5_
505	Mw-10		_		1		+		41		_		1			4			_	_	_	-	_	_					$\dashv$	5
505	15 Mw-le				+		+			30	_		+		$\dashv$	4	4	4	_		-		$\dashv$					-	$\dashv$	_5
505	10 Mw - 5				+		+		5		-		+		-	-		$\exists$	-		$\dashv$	-		_	-	_	-		-	5
505 505	1 MM - 2		-	$\subseteq$	╁		+	!	5.		_		+			$\exists$		$\exists$	$\dashv$	$\dashv$	$\dashv$	-	$\dashv$				$\vdash$	$\vdash$	$\dashv$	<u> </u>
50 3	79 MW-3		_	_	╁		+			45	$\neg$		+					-	$\dashv$	$\dashv$	$\dashv$	-	ᅱ				-	-		<u>.5</u>
505 505	80 NW-1			-	$\mathbf{v}$	ROB	+			20		-	*	U <b>I</b>	7	7	7	7		-		$\dashv$	7					$\vdash$	$\dashv$	3
50.	7/00			L		777.07			4				•	~	1						Total	Nu	746Q	r of I	Bottle	es/C	onta	iners	:	50
	Relinquished By,												Date				Time Received By Date					寸	Time							
	mily Ha				2-3-95					1720		Z	Issal I			L	<u></u>			1/3/95			1720							
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															Ĺ,															
	Client NPWC ENV. LAB														_	Pur	chas	e Or	der	Num	ber									
	Address (	· ·								Project Number																				
	City	. State Zip		p <sup>'</sup>					Project Name																					
	Phone Number ( ) Fax Number ( ),				,				Project Location RADAR STATION																					
	Project Manager JEMY DEES						Sampled By Ricky Known RFOR / Range Maun																							
	TURNAROUND TIMES check below				low		SPECIAL INSTRUCTIONS																							
	.dard - 14-21 days								•		_					<u>.</u>														
	RUSH (mus	t be	app	rove	l In	advan	ce)				1																			
	<- 48 hours - 2x standard price					_												-												
	3-7 days - 1.5x standard p	rice										_																		
	TCLP - 1 week rush 1.5x s	tand	ard	price	:						$\perp$																			
	QC Level none (1) II III IV (				(cir	(circle one) Copies						port needed																		



# RH 95-154 Pg 20+2 CHAIN OF CUSTODY

**PART 1 - Bottle Shipment Information** ATI ACCESSION #: \_ **CLIENT PROJECT NUMBER:** CLIENT: **PLASTIC CONTAINERS GLASS CONTAINERS** PRESERVATIVE QUANTITY OF SAMPLE 1 liter (A) Whirl-pak CONTAINERS **NOTES** SHIPPED 32 oz. 1 liter ( 32 oz. 8 oz. SC+ Relinquished By: Time Date Received By: Time PARAMETERS AND PRESERVATIVES REQUESTED PART 2 - Sample/Project Information SAMPLE MATRIX CODES SW SURFACE WATER DW DRINKING WATER Al AlR TOTAL # SO SCIL SL SLUDGE WW WASTEWATER OF STORMWATER GW GROUNDWATER OI OIL BOTTLES PR SAMPLE I.D. SAMPLE DATE SAMPLE TIME MATRIX LW 1620 TRIP BLANK 1445 water water Total Number of Bottles/Containers: Time Received By Date Date Time 2-3-95 1120 17Z0 Purchase Order Number Client CNV. LAB Address **Project Number** City State Zip Project Name Project Location Fax Number ( Phone Number ( JERRY Sampled By Project Manager SPECIAL INSTRUCTIONS TURNAROUND TIMES check below idard - 14-21 days RUSH (must be approved in advance) < - 48 hours - 2x standard price 3-7 days - 1.5x standard price TCLP - 1 week rush 1.5x standard price Copies of report needed QC Level none IV (circle one)

#### APPENDIX D

 $\lambda$ 

GROUNDWATER TECHNOLOGY CORRESPONDENCE OF JANUARY 16, 1995



January 26, 1995

Groundwater Technology Government Services, Inc. 7140 North 9th Avenue, Pensacola, FL 32504 Tel: (904) 478-7128 Fax: (904) 478-7546

Mr. Greg Campbell NASP - Building 3691 Pensacola, FL 32508-6500

Subject:

Radar Installation

**Building 3255** 

Sherman Field NASP

GSI Project 830011147.010

Dear Mr. Campbell:

Groundwater Technology Government Services, Inc. (GSI) personnel were on site to take liquid levels in the monitoring wells at the above-referenced site. The subject property is north of the flight operations facilities at Sherman Field NAS and south of Bayou Grande located on Pensacola Naval Air Station Mainside.

GSI personnel arrived at the PWC Environmental Engineering Facility and were meet by Mr. Chadd Burthelson. The purpose of the visit was to gauge the wells for water table elevations and possible free-phase petroleum hydrocarbons. No free-phase petroleum hydrocarbons were detected in any of the monitoring wells and the liquid levels ranged from 2.92 feet below top of casing surface in MW-1 to 1.81 feet below top of casing in MW-6 (data are recorded within one hundredth of an inch accuracy). The procedure used by personnel to gauge the wells was as follows:

- opened all the wells and allowed them to equilibrate to the ambient pressure
- gauged the wells using the north side of the well casing as the datum point
- decontaminated the interface probe with the use of a probe wiper and solutions of Alconox<sup>™</sup> and water, Isopropyl alcohol and water, and de-ionized water (all of the solutions were used to wash off any contamination in specific wells in order to avoid cross contaminating the wells)
- closed and locked the wells using the provided locking caps and locks.

Results of the well gauging are presented in table 1. A site sketch was also made in the field book in order to help document the facility layout and determine the possible groundwater flow direction for the site. A copy of the field notes are enclosed.

830011147.010/50/gsl966.let

If you have any questions regarding the information contained in this letter, please contact me or Allen Stamp at (904) 478-7128.

'n

Sincerely,

Groundwater Technology Government Services, Inc.

Christopher O'Hara Christopher O'Gara Associate Geologist

CO/ac

**Enclosures** 

TABLE 1 Liquid Level Summary

#### Radar Installation, Building 3255, Sherman Field NASP, Pensacola, Florida January 26, 1995

Sample Location	T.O.C.	Estimated Water Table Elevation
MW-1	NA	2.92
MW-2	NA	2.47
MW-3	NA	2.69
MW-4	, NA	2.45
MW-5	NA	2.47
MW-6	. NA	1.81
MW-7	· NA	2.73
MW-8	NA	2.72
MW-9	NA	1.98
MW-10	NA	2.18

Notes: NA= information Not Available
All results reported to within one hundredth of an inch

830011147.010/50/gsi966.let

